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[Help](#)
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[Interrupt](#)
[Main Menu](#)
[Search Form](#)
[Posting Counts](#)
[Show S Numbers](#)
[Edit S Numbers](#)
[Preferences](#)
[Cases](#)

Search Results -

Terms	Documents
L30 not l28	75

Database:

[US Patents Full-Text Database](#)
[US Pre-Grant Publication Full-Text Database](#)
[JPO Abstracts Database](#)
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[Derwent World Patents Index](#)
[IBM Technical Disclosure Bulletins](#)

Search:

L31

[Refine Search](#)
[Recall Text](#)
[Clear](#)

Search History

DATE: Monday, July 21, 2003 [Printable Copy](#) [Create Case](#)

Set Name Query
side by side

Hit Count Set Name
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

L31	L30 not l28	75	L31
L30	L19 and l24	85	L30
L29	L28 not l26	11	L29
L28	l24 and L27	12	L28
L27	herbicide\$6 or insecticide\$6 or fungicide\$6 or pesticide\$6 or agrochemical\$5 or agrichemical\$5 or horticultur\$5	197021	L27
L26	l24 and L25	1	L26
L25	504.clas.	15287	L25
L24	l18 and L23	96	L24
L23	l13 and L22	314	L23
L22	l2 same L21	738	L22

<u>L21</u>	l5 near3 (aminoalkylamine\$1 or diamine\$1)	6348	<u>L21</u>
<u>L20</u>	amino adj l4 adj alkylamine\$1	4	<u>L20</u>
<u>L19</u>	l17 and L18	85	<u>L19</u>
<u>L18</u>	(252 OR 510).CLAS.	107774	<u>L18</u>
<u>L17</u>	l15 and L16	266	<u>L17</u>
<u>L16</u>	l2 same L14	740	<u>L16</u>
<u>L15</u>	l2 same L13	6587	<u>L15</u>
<u>L14</u>	L5 near3 (diamine\$1 or alkylamine\$1 or etherdiamine\$1)	6376	<u>L14</u>
<u>L13</u>	L5 near3 (amine\$1 or alkylamine\$1 or etheramine\$1)	22954	<u>L13</u>
<u>L12</u>	l8 and L11	26	<u>L12</u>
<u>L11</u>	l9 or L10	55223	<u>L11</u>
<u>L10</u>	hooccooh	46	<u>L10</u>
<u>L9</u>	oxalic or ethanedioic	55218	<u>L9</u>
<u>L8</u>	l1 and L7	347	<u>L8</u>
<u>L7</u>	l2 same L6	8343	<u>L7</u>
<u>L6</u>	L5 near3 (amine\$1 or alkylamine\$1 or ammonium or alkylammonium)	29758	<u>L6</u>
<u>L5</u>	glycol or polyglycol or ethyleneglycol or l4	819227	<u>L5</u>
<u>L4</u>	alkoxy\$5 or ethoxy\$5 or propoxy\$5 or oxyalkyl\$5 or oxyethyl\$5 or oxypropyl\$5 or polyalkoxy\$5 or polyethoxy\$5 or polypropoxy\$5 or polyoxyalkyl\$5 or polyoxyethyl\$5 or polyoxypropyl\$5 or EO or po	577090	<u>L4</u>
<u>L3</u>	alkyletheramine\$1 or alkyletherammonium or (alkyl adj (etheramine\$1 or etherammonium))	46	<u>L3</u>
<u>L2</u>	surfactant\$1 or (surface active)	325262	<u>L2</u>
<u>L1</u>	glyphosate OR (roundup or spator or muster or glifonox or glycel) OR (phosphonomethylglycine or ((phosphonomethyl or (phosphono methyl)) glycine))	6055	<u>L1</u>

END OF SEARCH HISTORY

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 5998331 A

L26: Entry 1 of 1

File: USPT

Dec 7, 1999

US-PAT-NO: 5998331

DOCUMENT-IDENTIFIER: US 5998331 A

TITLE: Organoamine siloxane alkoxylate surfactants

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Policello; George A.	Ossining	NY		

US-CL-CURRENT: 504/362; 424/407, 504/206, 504/365, 510/421, 510/466, 516/204,
516/55, 516/77

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

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Terms	Documents
l24 and L25	1

Display Format:

-

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WEST**End of Result Set**☐ **Generate Collection** **Print**

L26: Entry 1 of 1

File: USPT

Dec 7, 1999

DOCUMENT-IDENTIFIER: US 5998331 A

TITLE: Organoamine siloxane alkoxyate surfactants

Detailed Description Text (11):

Other examples of useful nonionic surfactants include alkoxyated diamines of the formula $(H(R_{sup}T)_{sub}T)_{sub}2 NC_{sub}2 H_{sub}4 N((R_{sup}T)_{sub}T H)_{sub}2$ wherein $R_{sup}T$ denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxyated diamine is 1,000 to 15,000. Preferably, ethoxy units comprise 10 to 90% and more preferably 20 to 50% of the polyalkoxyate chains. Other examples of useful nonionic surfactants are glycosides.

Detailed Description Paragraph Table (3):

TABLE 3	Description of Comparative
Conventional Nonsilicone Surfactants Ref. Moles EO Remarks	
X-100) (Union Carbide Corp.) TAE 15 Tallow	OPE 10 Octylphenol ethoxyate (TRITON .RTM. T/25)
(Akzo Nobel)	amine ethoxyate (ETHOMEEN .RTM. T/25)

Current US Class (2):

504

Current US Class (3):

510

CLAIMS:

3. A composition according to claim 2 additionally comprising a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula $R_{sup}A --O(R_{sup}C)_{sub}c R_{sup}E$ wherein $R_{sup}A$ and $R_{sup}E$ each denote hydrogen or $C_{sub}1$ to $C_{sub}12$ alkyl (straight or branched chain), $R_{sup}C$ denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 500 to 15,000; and alkoxyated diamines of the formula $(H(R_{sup}T)_{sub}T)_{sub}2 NC_{sub}2 H_{sub}4 N((R_{sup}T)_{sub}T H)_{sub}2$ wherein $R_{sup}T$ denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxyated diamine is 1,000 to 15,000.

6. A composition according to claim 5 additionally comprising a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula $R_{sup}A --O(R_{sup}C)_{sub}c R_{sup}E$ wherein $R_{sup}A$ and $R_{sup}E$ each denote hydrogen or $C_{sub}1$ to $C_{sub}12$ alkyl (straight or branched chain), $R_{sup}C$ denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 500 to 15,000; and alkoxyated diamines of the formula $(H(R_{sup}T)_{sub}T)_{sub}2 NC_{sub}2 H_{sub}4 N((R_{sup}T)_{sub}T H)_{sub}2$ wherein $R_{sup}T$ denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxyated diamine is 1,000 to 15,000.

8. A composition according to claim 7 additionally comprising a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula

R.sup.A --O(R.sup.C).sub.c R.sup.E wherein R.sup.A and R.sup.E each denote hydrogen or C.sub.1 to C.sub.12 alkyl (straight or branched chain), R.sup.C denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 500 to 15,000 [and preferably 1,000 to 8,000]; and alkoxylated diamines of the formula (H(R.sup.T).sub.T).sub.2 NC.sub.2 H.sub.4 N((R.sup.T).sub.T H).sub.2 wherein R.sup.T denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxylated diamine is 1,000 to 15,000.

15. A composition according to claim 1 additionally comprising a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula R.sup.A --O(R.sup.C).sub.c R.sup.E wherein R.sup.A and R.sup.E each denote hydrogen or C.sub.1 to C.sub.12 alkyl (straight or branched chain), R.sup.C denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 500 to 15,000; and alkoxylated diamines of the formula (H(R.sup.T).sub.T).sub.2 NC.sub.2 H.sub.4 N((R.sup.T).sub.T H).sub.2 wherein R.sup.T denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxylated diamine is 1,000 to 15,000.

21. A process according to claim 16 comprising applying to said plant a composition comprising said modified siloxane, an acid functional pesticide and a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula R.sup.A --O(R.sup.C).sub.c R.sup.E wherein R.sup.A and R.sup.E each denote hydrogen or C.sub.1 to C.sub.12 alkyl (straight or branched chain), R.sup.C denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 500 to 15,000 [and preferably 1,000 to 8,000]; and alkoxylated diamines of the formula (H(R.sup.T).sub.T).sub.2 NC.sub.2 H.sub.4 N((R.sup.T).sub.T H).sub.2 wherein R.sup.T denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxylated diamine is 1,000 to 15,000.

22. A process according to claim 16 comprising applying to said plant a composition comprising said modified siloxane, an acid functional pesticide, and a nonionic surfactant selected from the group consisting of alkyl alkoxyates corresponding to the formula R.sup.A --O(R.sup.C).sub.c R.sup.E wherein R.sup.A and R.sup.E each denote hydrogen or C.sub.1 to C.sub.12 alkyl (straight or branched chain), R.sup.C denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript c is selected so that the molecular weight of the surfactant is 1,000 to 8,000; and alkoxylated diamines of the formula (H(R.sup.T).sub.T).sub.2 NC.sub.2 H.sub.4 N((R.sup.T).sub.T H).sub.2 wherein R.sup.T denotes alkoxy groups containing 2 or 3 carbon atoms each, and the subscript T is selected so that the molecular weight of the alkoxylated diamine is 1,000 to 15,000.

☒ 5. Document ID: US 6306805 B1

L29: Entry 5 of 11

File: USPT

Oct 23, 2001

US-PAT-NO: 6306805

DOCUMENT-IDENTIFIER: US 6306805 B1

TITLE: Shampoo and body wash composition comprising ternary surfactant blends of cationic, anionic, and bridging surfactants and methods of preparing same

DATE-ISSUED: October 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bratescu; Daniela T.	Glenview	IL		
Bernhardt; Randy	Lindenhurst	IL		
Sporer; Cathie	Lindenhurst	IL		
Lyons; Sandy	Glencoe	IL		
Nelson; Jeff	Lake Bluff	IL		
Bezdicek; Rita	Shanghai			CN

US-CL-CURRENT: 510/123; 510/119, 510/124, 510/125, 510/426, 510/427, 510/428,
510/429, 510/433, 510/503, 510/504

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
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☒ 6. Document ID: US 5128055 A

L29: Entry 6 of 11

File: USPT

Jul 7, 1992

US-PAT-NO: 5128055

DOCUMENT-IDENTIFIER: US 5128055 A

TITLE: Fabric conditioning composition

DATE-ISSUED: July 7, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foster; Francis G.	Wirral			GB2

US-CL-CURRENT: 510/522; 510/524, 510/525, 510/526

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
Draw Desc	Image									

☐ 7. Document ID: US 4661529 A

L29: Entry 7 of 11

File: USPT

Apr 28, 1987

US-PAT-NO: 4661529

DOCUMENT-IDENTIFIER: US 4661529 A

TITLE: Polyurethane and urethane-modified isocyanurate foams and a polyol composition useful in their preparation

DATE-ISSUED: April 28, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kuhn; E.	Zurich			CH
Boer; J. Den	Wadenswil			CH
Thoen; J.	Wadenswil			CH

US-CL-CURRENT: 521/137; 252/182.14, 252/182.15, 252/182.17, 252/182.27, 521/173, 521/174, 521/176, 521/902, 521/914

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 8. Document ID: US 4555349 A

L29: Entry 8 of 11

File: USPT

Nov 26, 1985

US-PAT-NO: 4555349

DOCUMENT-IDENTIFIER: US 4555349 A

TITLE: Fabric softening compositions

DATE-ISSUED: November 26, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Butterworth; Robert M.	Wirral			GB2
Wells; Martin A.	Wirral			GB2

US-CL-CURRENT: 510/526; 8/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 9. Document ID: US 4149978 A

L29: Entry 9 of 11

File: USPT

Apr 17, 1979

US-PAT-NO: 4149978

DOCUMENT-IDENTIFIER: US 4149978 A

TITLE: Textile treatment composition

DATE-ISSUED: April 17, 1979

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Goffinet; Pierre C. E.	Brussels			BE

US-CL-CURRENT: 510/516; 8/115.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 10. Document ID: US 4058488 A

L29: Entry 10 of 11

File: USPT

Nov 15, 1977

US-PAT-NO: 4058488

DOCUMENT-IDENTIFIER: US 4058488 A

TITLE: Imidazoline oxides

DATE-ISSUED: November 15, 1977

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wakeman; Reginald L.	Paris			FR
Dudzinski; Zdzislaw W.	Clifton	NJ		
Lada; Arnold	Montclair	NJ		

US-CL-CURRENT: 510/500; 510/123, 510/152, 510/237, 510/341, 510/368, 510/423,
510/496, 548/348.1, 548/350.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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Terms	Documents
L28 not l26	11

Display Format:

-

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WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 11 of 11 returned.**☐ 11. Document ID: US 3951878 A

L29: Entry 11 of 11

File: USPT

Apr 20, 1976

US-PAT-NO: 3951878

DOCUMENT-IDENTIFIER: US 3951878 A

TITLE: Imidazoline oxides

DATE-ISSUED: April 20, 1976

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wakeman; Reginald L.	Philadelphia	PA		
Dudzinski; Zdzislaw J.	Clifton	NJ		
Lada; Arnold	Montclair	NJ		

US-CL-CURRENT: [510/500](#); [510/123](#), [510/138](#), [510/152](#), [510/237](#), [510/341](#), [510/347](#),
[510/384](#), [510/496](#), [548/348.1](#), [548/350.1](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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Terms	Documents
L28 not l26	11

Display Format:

-

[Change Format](#)[Previous Page](#)[Next Page](#)

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L29: Entry 5 of 11

File: USPT

Oct 23, 2001

DOCUMENT-IDENTIFIER: US 6306805 B1

TITLE: Shampoo and body wash composition comprising ternary surfactant blends of cationic, anionic, and bridging surfactants and methods of preparing same

Brief Summary Text (20):

The present invention provides surfactant compositions which are particularly useful for preparing a variety of finished consumer cleaning products, including for example multi-functional shampoos and body washes. The present invention accordingly provides surfactant shampoo (or body wash) compositions which impart cleaning, foaming and/or conditioning properties to the hair. Although these products are the focus of the invention, the surfactant compositions disclosed herein may be used to prepare finished liquid dish detergents, laundry detergents, automatic dishwasher detergents, hand soaps, laundry bars, personal cleansing bars, multi-purpose cleaners and textile treatment compositions. Surfactant blends of the present invention also may be optionally employed as surfactants in agricultural and pesticide applications. Additionally, the surfactant blends may be utilized in antimicrobial detergent formulations (e.g., antimicrobial hard surface cleaners, hand soaps, shampoos, and dish detergents), soft-terg delivery systems and pre-spotter compositions. Surfactant blends of the present invention may be prepared in various concentrations and exhibit a wide range of rheological behavior. The surfactant blends display excellent detergent, cleaning and conditioning properties.

Brief Summary Text (236):

Salts of primary, secondary and tertiary fatty amines are also suitable cationic surfactant materials. The alkyl groups of such amine salts preferably have from about 12 to about 22 carbon atoms, and may be substituted or unsubstituted. Secondary and tertiary amine salts are preferred, tertiary amine salts are particularly preferred. Suitable amine salts include the halogen (i.e. fluoride, chloride, bromide), acetate, phosphate, nitrate, citrate, lactate and alkyl sulfate salts. Amine salts derived from amine, such as for example, stearamido propyl dimethyl amine, diethyl amino ethyl stearamide, dimethyl stearamine, dimethyl soyamine, soyamine, myristyl amine, tridecyl amine, ethyl stearylamine, N-tallowpropane diamine, ethoxylated (5 moles E.O.) stearylamine, dihydroxy ethyl stearylamine, and arachidylbehenylamine, are useful herein. Such salts also include stearylamine hydrogen chloride, soyamine chloride, stearylamine formate, N-tallowpropane diamine dichloride and stearamidopropyl dimethylamine citrate. Additionally cationic surfactants included among those useful in the present invention are disclosed in U.S. Pat. No. 4,275,055, Nachtigal, et al., issued Jun. 23, 1981, incorporated herein by reference.

Brief Summary Text (257):

The bridging surfactants of the present invention are selected from the group consisting of semi-polar nonionic (i.e., amine oxides), ethoxamide, and amphoteric surfactants (i.e., betaines) and mixtures thereof. Especially preferred bridging surfactants include amine oxides, ethoxylated alkanolamides, and betaines.

Brief Summary Text (336):

Bluing agents such as ultramarine blue; enzymes, preferably proteolytic enzymes, such as subtilisin, bromelain, papain, trypsin and pepsin, as well as amylase type enzymes; bactericides, e.g. tetrachlorosalicylanilide, hexachlorophene; fungicides; dyes; pigments (water dispersible); preservatives; ultraviolet absorbers;

anti-yellowing agents, such as sodium carboxymethyl cellulose, complex of C.sub.12 to C.sub.22 alkyl alcohol with C.sub.12 to C.sub.18 alkylsulfate; pH modifiers and pH buffers; color safe bleaches, perfume, and anti-foam agents or suds suppressors, e.g. silicon compounds, can also be used.

Current US Class (1):

510

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L29: Entry 6 of 11

File: USPT

Jul 7, 1992

DOCUMENT-IDENTIFIER: US 5128055 A

TITLE: Fabric conditioning composition

Brief Summary Text (58):

When the product is in liquid form, the presence of a dispersing aid is preferred to improve the physical stability of the product. This dispersing aid should be a water-soluble non-anionic surfactant having an HLB of greater than 10, ideally greater than 12. Materials which fall within the definition of the cationic fabric softening agent used above are excluded. In this context, the term "water-soluble" means having a solubility of more than 1.0g/l in water at pH 2.5 and at 20.degree. C. Preferred examples include water-soluble quaternary ammonium salts (such as Arquad 16), ethoxylated quaternary ammonium salts (such as Ethoquad 0/12), quaternary diamine and ethoxylated diamine salts (such as Duoquad T), ethoxylated amines and diamines (such as Ethoduomeen T/25, Ethomeen T/15) and their acid salts, ethoxylated fatty esters of polyhydric alcohols (such as sorbitan monolaurate 20 EO), ethoxylated fatty alcohols (such as Dobanol 45 11EO - C14/15 alcohol 11 EO) and ethoxylated fatty acids (such as Myrj 49 - stearic acid 20 EO).

Brief Summary Text (62):

The compositions may also contain one or more optional ingredients selected from electrolytes, such as the salts of alkali metals and alkaline earth metals, non-aqueous solvents such as C.sub.1 -C.sub.4 alkanols and polyhydric alcohols, pH buffering agents such as weak acids e.g. phosphoric, benzoic or citric acids (the pH of the compositions are preferably less than 6.0), antigelling agents, perfumes, perfume carriers, fluorescers, colourants, hydrotropes, antifoaming agents, other antiredeposition agents, enzymes, optical brightening agents, opacifiers, stabilisers such as guar gum and polyethylene glycol, anti-shrinking agents, anti-wrinkle agents, fabric crisping agents, spotting agents, soil-release agents, germicides, fungicides, anti-oxidants, anti-corrosion agents, preservatives, dyes, bleaches and bleach precursors, drape imparting agents and antistatic agents.

Current US Class (1):510

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 75 returned.**☐ 1. Document ID: US 20030109407 A1

L31: Entry 1 of 75

File: PGPB

Jun 12, 2003

PGPUB-DOCUMENT-NUMBER: 20030109407

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030109407 A1

TITLE: Processes for making substantially anhydrous structured surfactant pastes and other detergent ingredients and compositions employing same

PUBLICATION-DATE: June 12, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Aouad, Yousef Georges	Cincinnati	OH	US	
Lienhart, Christopher John	Cincinnati	OH	US	

US-CL-CURRENT: [510/404](#); [510/424](#), [510/426](#), [510/499](#), [510/506](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw	Desc	Image								

☐ 2. Document ID: US 20030109403 A1

L31: Entry 2 of 75

File: PGPB

Jun 12, 2003

PGPUB-DOCUMENT-NUMBER: 20030109403

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030109403 A1

TITLE: Solid cleaning composition including stabilized active oxygen component

PUBLICATION-DATE: June 12, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Man, Victor Fuk-Pong	St. Paul	MN	US	
Lentsch, Steven Eugene	St. Paul	MN	US	
Olson, Keith Edward	Apple Valley	MN	US	
Smith, Kim R.	Woodbury	MN	US	

US-CL-CURRENT: [510/367](#); [510/376](#), [510/510](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw	Desc	Image								

☐ 3. Document ID: US 20030104968 A1

L31: Entry 3 of 75

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104968
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030104968 A1

TITLE: Silicone polymers for lipophilic fluid systems

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Deak, John Christopher	Clarks Summit	PA	US	
Gosselink, Eugene Paul	Cincinnati	OH	US	
Reilman, Randall Thomas	Cincinnati	OH	US	

US-CL-CURRENT: 510/466; 510/475

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 4. Document ID: US 20030104961 A1

L31: Entry 4 of 75

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104961
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030104961 A1

TITLE: Stable solid block metal protecting warewashing detergent composition

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lentsch, Steven E.	St. Paul	MN	US	
Man, Victor F.	St. Paul	MN	US	
Olson, Keith E.	Apple Valley	MN	US	

US-CL-CURRENT: 510/224; 510/191, 510/446, 510/447

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 5. Document ID: US 20030087793 A1

L31: Entry 5 of 75

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087793
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030087793 A1

TITLE: Fabric care compositions for lipophilic fluid systems

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Deak, John Christopher	Clarks Summit	PA	US	
Haught, John Christian	West Chester	OH	US	
Ladd, Joseph Michael JR.	Cleves	OH	US	
Severns, John Cort	West Chester	OH	US	
Thoen, Christian Arthur Jacques K.	West Chester	OH	US	
Collins, Jerome Howard	Cincinnati	OH	US	

US-CL-CURRENT: 510/466; 510/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 6. Document ID: US 20030087787 A1

L31: Entry 6 of 75

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087787

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030087787 A1

TITLE: Stable liquid enzyme compositions with enhanced activity

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Man, Victor Fuk-Pong	St. Paul	MN	US	
Lentsch, Steven Eugene	St. Paul	MN	US	
Tilleskjor, Jaclyn	Burnsville	MN	US	

US-CL-CURRENT: 510/392; 510/465, 510/530

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 7. Document ID: US 20030078184 A1

L31: Entry 7 of 75

File: PGPB

Apr 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030078184

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030078184 A1

TITLE: Non-silicone polymers for lipophilic fluid systems

PUBLICATION-DATE: April 24, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Deak, John Christopher	Clarks Summit	PA	US	
Gosselink, Eugene Paul	Cincinnati	OH	US	
Reilman, Randall Thomas	Cincinnati	OH	US	
Haeggberg, Donna Jean	Cincinnati	OH	US	

US-CL-CURRENT: [510/475](#); [510/476](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 8. Document ID: US 20030070692 A1

L31: Entry 8 of 75

File: PGPB

Apr 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030070692

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030070692 A1

TITLE: Peroxygen compositions and methods for carpet or upholstery cleaning or sanitizing

PUBLICATION-DATE: April 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Smith, Kim R.	Woodbury	MN	US	
Finley, Matthew Jon	Shakopee	MN	US	
Olson, Keith E.	Apple Valley	MN	US	
Man, Victor Fuk-Pong	St. Paul	MN	US	
Tadrowski, Tami J.	Greensborough	NC	US	
Levitt, Mark	St. Paul	MN	US	

US-CL-CURRENT: [134/6](#); [134/42](#), [15/320](#), [510/278](#), [510/281](#), [510/302](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 9. Document ID: US 20030069159 A1

L31: Entry 9 of 75

File: PGPB

Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030069159

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030069159 A1

TITLE: Down the drain cleaning system

PUBLICATION-DATE: April 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Deak, John Christopher	Clarks Summit	PA	US	
Scheper, William Michael	Lawrenceburg	IN	US	
France, Paul Amaat Raymond Gerald	West Chester	OH	US	
Vos, Eddy	Linden	OH	BE	
Lootvoet, Veerle Maria Nathalie	Gent	OH	BE	
Radomyselski, Arseni Valervich	Hamilton		US	
Haught, John Christian	West Chester		US	

US-CL-CURRENT: [510/421](#); [68/207](#), [68/208](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 10. Document ID: US 20030057395 A1

L31: Entry 10 of 75

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030057395

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030057395 A1

TITLE: Optimized synthetic base liquid for magnetorheological fluid formulations

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Iyengar, Vardarajan R.	Pontiac	MI	US	
Foister, Robert T.	Rochester Hills	MI	US	

US-CL-CURRENT: [252/62.52](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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Terms	Documents
L30 not 128	75

Display Format: [Change Format](#)[Previous Page](#)[Next Page](#)

☐ 13. Document ID: US 20030022806 A1

L31: Entry 13 of 75

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022806

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030022806 A1

TITLE: Binding agent for solid block functional material

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wei, G. Jason	Mendota Heights	MN	US	
Lentsch, Steven E.	St. Paul	MN	US	
Olson, Keith E.	Apple Valley	MN	US	
Man, Victor F.	St. Paul	MN	US	

US-CL-CURRENT: 510/224; 510/447, 510/480

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 14. Document ID: US 20020173437 A1

L31: Entry 14 of 75

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173437

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020173437 A1

TITLE: Methods and compositions for cleaning, rinsing, and antimicrobial treatment of medical equipment

PUBLICATION-DATE: November 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rabon, Reid	South St. Paul	MN	US	
Swart, Sally K.	Inver Grove Heights	MN	US	
Chandler, Denise	St. Paul	MN	US	
Everson, Terrence P.	Eagan	MN	US	

US-CL-CURRENT: 510/161; 134/19, 134/2, 134/22.1, 134/22.13, 134/22.14, 134/22.19, 134/26, 134/29, 134/30, 134/34, 134/36 , 134/6, 510/421

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 15. Document ID: US 20020130305 A1

L31: Entry 15 of 75

File: PGPB

Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020130305
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020130305 A1

TITLE: MR fluids containing magnetic stainless steel

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Iyengar, Vardarajan R.	Beavercreek	OH	US	
Foister, Robert T.	Rochester	MI	US	
Johnson, James C.	Beavercreek	OH	US	

US-CL-CURRENT: 252/570

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 16. Document ID: US 20020055449 A1

L31: Entry 16 of 75

File: PGPB

May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055449
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020055449 A1

TITLE: Laundry additive sachet

PUBLICATION-DATE: May 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Porta, Antonella	IT-Formia		IT	
Adrie Van Der Heijden, Mark Pieter	Rome		IT	

US-CL-CURRENT: 510/295; 510/297, 510/439

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 17. Document ID: US 20020031532 A1

L31: Entry 17 of 75

File: PGPB

Mar 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020031532
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020031532 A1

TITLE: SHAMPOO COMPOSITION COMPRISING SILICONE EMULSION

PUBLICATION-DATE: March 14, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
UCHIYAMA, HIROTAKE	KOBE		JP	

US-CL-CURRENT: 424/401; 424/70.1, 424/70.11, 424/70.12, 424/70.122, 424/70.13,
424/70.19, 510/119, 510/122, 510/123, 510/129

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 18. Document ID: US 20020000533 A1

L31: Entry 18 of 75

File: PGPB

Jan 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020000533

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020000533 A1

TITLE: Hydrophobic metal particles for magnetorheological composition

PUBLICATION-DATE: January 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Iyengar, Vardarajan R.	Beavercreek	OH	US	
Foister, Robert Thomas	Rochester Hills	MI	US	

US-CL-CURRENT: 252/62.55; 252/62.52, 252/62.54

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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R00C

☐ 19. Document ID: US 20010027171 A1

L31: Entry 19 of 75

File: PGPB

Oct 4, 2001

PGPUB-DOCUMENT-NUMBER: 20010027171

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010027171 A1

TITLE: Cleaning, conditioning and styling hair care composition

PUBLICATION-DATE: October 4, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sajac, Branko	Lincolnwood	IL	US	
Rao, Y. Kameshwer	Skokie	IL	US	

US-CL-CURRENT: 510/124; 510/475

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 20. Document ID: US 20010023239 A1

L31: Entry 20 of 75

File: PGPB

Sep 20, 2001

PGPUB-DOCUMENT-NUMBER: 20010023239

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010023239 A1

TITLE: Alkaline detergent containing mixed organic and inorganic sequestrants
resulting in improved soil removal

PUBLICATION-DATE: September 20, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lentsch, Steven E.	St. Paul	MN	US	
Olson, Keith E.	Apple Valley	MN	US	

US-CL-CURRENT: [510/445](#); [510/446](#), [510/447](#), [510/509](#), [510/510](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Terms	Documents
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L31: Entry 21 of 75

File: USPT

Jun 24, 2003

US-PAT-NO: 6583094

DOCUMENT-IDENTIFIER: US 6583094 B1

TITLE: Stable solid block detergent composition

DATE-ISSUED: June 24, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		
Wei; G. Jason	Mendota Heights	MN		
Man; Victor F.	St. Paul	MN		

US-CL-CURRENT: [510/224](#); [510/228](#), [510/231](#), [510/445](#), [510/446](#), [510/451](#), [510/469](#),
[510/509](#), [510/510](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RMC
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☐ **22. Document ID: US 6503879 B2**

L31: Entry 22 of 75

File: USPT

Jan 7, 2003

US-PAT-NO: 6503879

DOCUMENT-IDENTIFIER: US 6503879 B2

**** See image for Certificate of Correction ****TITLE: Alkaline detergent containing mixed organic and inorganic sequestrants
resulting in improved soil removal

DATE-ISSUED: January 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		
Man; Victor F.	St. Paul	MN		

US-CL-CURRENT: [510/446](#); [510/222](#), [510/224](#), [510/225](#), [510/228](#), [510/236](#), [510/298](#),
[510/299](#), [510/320](#), [510/345](#), [510/346](#), [510/445](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 23. Document ID: US 6462009 B1

L31: Entry 23 of 75

File: USPT

Oct 8, 2002

US-PAT-NO: 6462009

DOCUMENT-IDENTIFIER: US 6462009 B1

**** See image for Certificate of Correction ****

TITLE: Hydrophobizing microemulsions which improve the protection, drying rate and shine of surfaces

DATE-ISSUED: October 8, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nagy; Andras	Akron	OH		
Kennedy; Joseph P.	Akron	OH		
Swinehart; Lonn L.	Naples	FL		

US-CL-CURRENT: 510/417; 106/2, 510/475, 510/504

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 24. Document ID: US 6451219 B1

L31: Entry 24 of 75

File: USPT

Sep 17, 2002

US-PAT-NO: 6451219

DOCUMENT-IDENTIFIER: US 6451219 B1

TITLE: Use of high surface area untreated fumed silica in MR fluid formulation

DATE-ISSUED: September 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Iyengar; Vardarajan R.	Beavercreek	OH		
Foister; Robert T.	Rochester Hills	MI		

US-CL-CURRENT: 252/62.52

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 25. Document ID: US 6444631 B1

L31: Entry 25 of 75

File: USPT

Sep 3, 2002

US-PAT-NO: 6444631
DOCUMENT-IDENTIFIER: US 6444631 B1

TITLE: Dishwashing detergent product having a ultraviolet light resistant bottle

DATE-ISSUED: September 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ofosu-Asante; Kofi	Cincinnati	OH		
Kordenbrock; Robert Henry	Verona	KY		
Owens; Robert	Cincinnati	OH		

US-CL-CURRENT: 510/237; 206/524.1, 510/235, 510/421, 510/422, 510/423, 510/426,
510/427, 510/428, 510/433, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 26. Document ID: US 6436893 B1

L31: Entry 26 of 75

File: USPT

Aug 20, 2002

US-PAT-NO: 6436893
DOCUMENT-IDENTIFIER: US 6436893 B1

TITLE: Alkaline detergent containing mixed organic and inorganic sequestrants
resulting in improved soil removal

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		
Man; Victor F.	St. Paul	MN		

US-CL-CURRENT: 510/446; 510/222, 510/224, 510/225, 510/228, 510/236, 510/298,
510/299, 510/346, 510/445

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 27. Document ID: US 6410495 B1

L31: Entry 27 of 75

File: USPT

Jun 25, 2002

US-PAT-NO: 6410495
DOCUMENT-IDENTIFIER: US 6410495 B1

TITLE: Stable solid block metal protecting warewashing detergent composition

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Man; Victor F.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		

US-CL-CURRENT: 510/224; 134/25.2, 510/233, 510/445, 510/451, 510/469, 510/509,
510/510, 510/511, 510/512

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 28. Document ID: US 6348441 B1

L31: Entry 28 of 75

File: USPT

Feb 19, 2002

US-PAT-NO: 6348441

DOCUMENT-IDENTIFIER: US 6348441 B1

TITLE: Method of laundering soiled fabrics by non-aqueous detergent formulated to control dye transfer and sudsing in high efficiency washing machines

DATE-ISSUED: February 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Aiken, III; John Davis	Cincinnati	OH		
Sampath; Murali	Cincinnati	OH		
Swift, II; Ronald Allen	West Chester	OH		

US-CL-CURRENT: 510/304; 510/276, 510/309, 510/312, 510/347, 510/360, 8/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☒ 29. Document ID: US 6310025 B1

L31: Entry 29 of 75

File: USPT

Oct 30, 2001

US-PAT-NO: 6310025

DOCUMENT-IDENTIFIER: US 6310025 B1

TITLE: Laundry pretreatment process and bleaching compositions

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Del Duca; Valerio	Massa Lubrense			IT
Masotti; Valentina	Casalecchio di Reno			IT
Scialla; Stefano	Rome			IT

US-CL-CURRENT: 510/283; 510/299, 510/303, 510/309, 510/372, 510/475

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 30. Document ID: US 6261828 B1

L31: Entry 30 of 75

File: USPT

Jul 17, 2001

US-PAT-NO: 6261828

DOCUMENT-IDENTIFIER: US 6261828 B1

TITLE: Process for combined desizing and "stone-washing" of dyed denim

DATE-ISSUED: July 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lund; Henrik	Copenhagen			DK

US-CL-CURRENT: 435/263; 435/200, 435/202, 435/209, 435/252.3, 435/264, 435/69.1,
510/303, 510/320, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L31: Entry 31 of 75

File: USPT

Jul 10, 2001

US-PAT-NO: 6258765

DOCUMENT-IDENTIFIER: US 6258765 B1

TITLE: Binding agent for solid block functional material

DATE-ISSUED: July 10, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wei; G. Jason	Mendota Heights	MN		
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		
Man; Victor F.	St. Paul	MN		

US-CL-CURRENT: [510/224](#); [510/228](#), [510/451](#), [510/467](#), [510/490](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[R000](#)☐ 32. Document ID: US 6258591 B1

L31: Entry 32 of 75

File: USPT

Jul 10, 2001

US-PAT-NO: 6258591

DOCUMENT-IDENTIFIER: US 6258591 B1

TITLE: One-pack preparation for disinfection, neutralization and cleaning of contact lenses and method of disinfection, neutralization and cleaning

DATE-ISSUED: July 10, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yoneda; Toyooki	Takarazuka			JP
Fujii; Takashi	Kinosaki-gun			JP
Morita; Mika	Toyooka			JP
Ohnuma; Takeshi	Machida			JP
Tanouchi; Hiroshi	Takarazuka			JP
Nakamura; Shigeru	Toyooka			JP

US-CL-CURRENT: [435/264](#); [134/901](#), [422/37](#), [510/114](#), [514/840](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 33. Document ID: US 6218346 B1

L31: Entry 33 of 75

File: USPT

Apr 17, 2001

US-PAT-NO: 6218346

DOCUMENT-IDENTIFIER: US 6218346 B1

TITLE: Methods for cleaning, conditioning and styling hair

DATE-ISSUED: April 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sajic; Branko	Lincolnwood	IL		
Rao; Y. Kameshwer	Skokie	IL		

US-CL-CURRENT: 510/124; 132/203, 424/70.11, 424/70.13, 424/70.19, 424/70.21,
424/70.28, 424/70.31, 510/121, 510/123, 510/476, 8/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 34. Document ID: US 6184194 B1

L31: Entry 34 of 75

File: USPT

Feb 6, 2001

US-PAT-NO: 6184194

DOCUMENT-IDENTIFIER: US 6184194 B1

TITLE: High foaming, grease cutting light duty liquid detergent having antibacterial properties comprising proton donating agent

DATE-ISSUED: February 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arvanitidou; Evangelia	Kendall Park	NJ		
Suriano; David	Monroe Township	NJ		
Engels; Amy	Matawan	NJ		
Jakubicki; Gary	Robbinsville	NJ		

US-CL-CURRENT: 510/426; 510/424, 510/428, 510/477, 510/490, 510/505, 510/508

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 35. Document ID: US 6177392 B1

L31: Entry 35 of 75

File: USPT

Jan 23, 2001

US-PAT-NO: 6177392

DOCUMENT-IDENTIFIER: US 6177392 B1

TITLE: Stable solid block detergent composition

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		
Wei; G. Jason	Mendota Heights	MN		

US-CL-CURRENT: [510/224](#); [510/228](#), [510/451](#), [510/467](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 36. Document ID: US 6172024 B1

L31: Entry 36 of 75

File: USPT

Jan 9, 2001

US-PAT-NO: 6172024

DOCUMENT-IDENTIFIER: US 6172024 B1

TITLE: High foaming grease cutting light duty liquid detergent comprising a poly (oxyethylene) diamine

DATE-ISSUED: January 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arvanitidou; Evangelia	Kendall Park	NJ		

US-CL-CURRENT: [510/237](#); [510/235](#), [510/427](#), [510/428](#), [510/499](#), [510/508](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 37. Document ID: US 6172022 B1

L31: Entry 37 of 75

File: USPT

Jan 9, 2001

US-PAT-NO: 6172022

DOCUMENT-IDENTIFIER: US 6172022 B1

TITLE: High foaming, grease cutting light duty liquid detergent comprising poly (oxyethylene) diamine

DATE-ISSUED: January 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arvanitidou; Evangelia	Kendall Park	NJ		

US-CL-CURRENT: [510/237](#); [510/428](#), [510/433](#), [510/470](#), [510/501](#), [510/503](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 38. Document ID: US 6156715 A

L31: Entry 38 of 75

File: USPT

Dec 5, 2000

US-PAT-NO: 6156715

DOCUMENT-IDENTIFIER: US 6156715 A

TITLE: Stable solid block metal protecting warewashing detergent composition

DATE-ISSUED: December 5, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Man; Victor F.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		

US-CL-CURRENT: [510/224](#); [134/25.2](#), [510/233](#), [510/445](#), [510/451](#), [510/469](#), [510/509](#),
[510/510](#), [510/511](#), [510/512](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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☒ 39. Document ID: US 6153577 A

L31: Entry 39 of 75

File: USPT

Nov 28, 2000

US-PAT-NO: 6153577

DOCUMENT-IDENTIFIER: US 6153577 A

TITLE: Polyoxyalkylene surfactants

DATE-ISSUED: November 28, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cripe; Thomas Anthony	Loveland	OH		
Connor; Daniel Stedman	Cincinnati	OH		
Vinson; Phillip Kyle	Fairfield	OH		
Burckett-St. Laurent; James Charles Theophile Roger	Cincinnati	OH		
Willman; Kenneth William	Fairfield	OH		

US-CL-CURRENT: [510/356](#); [510/505](#), [510/506](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC

☐ 40. Document ID: US 6150324 A

L31: Entry 40 of 75

File: USPT

Nov 21, 2000

US-PAT-NO: 6150324

DOCUMENT-IDENTIFIER: US 6150324 A

TITLE: Alkaline detergent containing mixed organic and inorganic sequestrants
resulting in improved soil removal

DATE-ISSUED: November 21, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lentsch; Steven E.	St. Paul	MN		
Olson; Keith E.	Apple Valley	MN		

US-CL-CURRENT: 510/446; 510/222, 510/224, 510/225, 510/228, 510/236, 510/298,
510/299, 510/346, 510/445

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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[Generate Collection](#)[Print](#)

Terms	Documents
L30 not 128	75

Display Format:

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[Change Format](#)[Previous Page](#)[Next Page](#)

☒ 43. Document ID: US 6080713 A

L31: Entry 43 of 75

File: USPT

Jun 27, 2000

US-PAT-NO: 6080713

DOCUMENT-IDENTIFIER: US 6080713 A

**** See image for Certificate of Correction ****

TITLE: Method for cleaning hydrocarbon-containing greases and oils from fabric in laundry washing applications

DATE-ISSUED: June 27, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crutcher; Terry	Fitchburg	WI	53711	

US-CL-CURRENT: 510/413; 510/423, 510/503, 510/506, 8/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 44. Document ID: US 6077316 A

L31: Entry 44 of 75

File: USPT

Jun 20, 2000

US-PAT-NO: 6077316

DOCUMENT-IDENTIFIER: US 6077316 A

TITLE: Treatment of fabrics

DATE-ISSUED: June 20, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lund; Henrik	Copenhagen N			DK
Nilsson; Thomas Erik	Copenhagen .O slashed.			DK
Pickard; Tom	Rossendale			GB

US-CL-CURRENT: 8/115.6; 510/320, 510/321, 510/392, 510/530

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 45. Document ID: US 6022841 A

L31: Entry 45 of 75

File: USPT

Feb 8, 2000

US-PAT-NO: 6022841

DOCUMENT-IDENTIFIER: US 6022841 A

TITLE: Aqueous cleaning and disinfecting compositions based on quaternary ammonium

compounds including alkoxylated fatty acid amines having reduced irritation characteristics

DATE-ISSUED: February 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lu; Robert Zhong	Hasbrouck Heights	NJ		
Smialowicz; Dennis Thomas	Waldwick	NJ		
Rypkema; Ralph Edward	Lodi	NJ		
McCue; Karen Ann	Tenafly	NJ		
Kloeppel; Andrew Arno	Mahwah	NJ		
Burt; Diane Joyce	New Windsor	NY		
Love; Michael David	Parsippany	NJ		
Bogart; Robert William	River Vale	NJ		
Nanavati; Narendra Vrajlal	Maywood	NJ		
Taraschi; Frederic Albert	Skillman	NJ		

US-CL-CURRENT: 510/384; 510/365, 510/421, 510/499, 510/504, 510/505

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMIC

☐ 46. Document ID: US 6017860 A

L31: Entry 46 of 75

File: USPT

Jan 25, 2000

US-PAT-NO: 6017860

DOCUMENT-IDENTIFIER: US 6017860 A

TITLE: Cleaning, conditioning and styling hair care compositions

DATE-ISSUED: January 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sajic; Branko	Lincolnwood	IL		
Rao; Y. Kameshwer	Skokie	IL		

US-CL-CURRENT: 510/124; 424/70.11, 424/70.13, 424/70.19, 424/70.21, 424/70.28, 424/70.31, 510/121, 510/123, 510/476

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMIC

☐ 47. Document ID: US 5919742 A

L31: Entry 47 of 75

File: USPT

Jul 6, 1999

US-PAT-NO: 5919742

DOCUMENT-IDENTIFIER: US 5919742 A

TITLE: Contact lens cleaning material formed of a polymer

DATE-ISSUED: July 6, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tsuzuki; Akira	Nagoya			JP
Tanikawa; Sadayasu	Kasugai			JP

US-CL-CURRENT: [510/112](#); [510/383](#), [510/384](#), [510/403](#), [510/434](#), [510/445](#), [510/455](#),
[510/475](#), [510/476](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 48. Document ID: US 5883065 A

L31: Entry 48 of 75

File: USPT

Mar 16, 1999

US-PAT-NO: 5883065

DOCUMENT-IDENTIFIER: US 5883065 A

TITLE: Phase separated detergent composition

DATE-ISSUED: March 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Swift, II; Ronald A.	West Chester	OH		
Morrall; Stephen W.	Guilford	IN		

US-CL-CURRENT: [510/321](#); [510/281](#), [510/323](#), [510/341](#), [510/342](#), [510/350](#), [510/361](#),
[510/417](#), [510/499](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 49. Document ID: US 5871590 A

L31: Entry 49 of 75

File: USPT

Feb 16, 1999

US-PAT-NO: 5871590

DOCUMENT-IDENTIFIER: US 5871590 A

TITLE: Vehicle cleaning and drying compositions

DATE-ISSUED: February 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hei; Robert D. P.	Oakdale	MN		
Besse; Michael E.	Golden Valley	MN		
Klos; Terry J.	Victoria	MN		
Lokkesmoe; Keith D.	Savage	MN		
Tarara; James J.	Woodbury	MN		
Person Hei; Kimberly L.	Oakdale	MN		

US-CL-CURRENT: 134/26; 134/2, 134/6, 252/79.4, 252/79.5, 510/189

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 50. Document ID: US 5833874 A

L31: Entry 50 of 75

File: USPT

Nov 10, 1998

US-PAT-NO: 5833874

DOCUMENT-IDENTIFIER: US 5833874 A

TITLE: Fire extinguishing gels and methods of preparation and use thereof

DATE-ISSUED: November 10, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stewart; Harry E.	Malvern	PA		
MacElwee; Donald B.	Wayne	PA		

US-CL-CURRENT: 252/8; 169/11, 169/44, 169/46, 252/3, 252/8.05

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Terms	Documents
L30 not l28	75

Display Format:

-

[Change Format](#)[Previous Page](#)[Next Page](#)

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 51 through 60 of 75 returned.**☐ 51. Document ID: US 5759988 A

L31: Entry 51 of 75

File: USPT

Jun 2, 1998

US-PAT-NO: 5759988

DOCUMENT-IDENTIFIER: US 5759988 A

TITLE: Stable hygroscopic detergent article

DATE-ISSUED: June 2, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Heile; Bernard Joseph	Apple Valley	MN		
Tarara; James John	Woodbury	MN		

US-CL-CURRENT: [510/441](#); [510/108](#), [510/224](#), [510/225](#), [510/294](#), [510/298](#), [510/445](#),
[510/446](#), [510/451](#), [510/467](#), [510/475](#), [510/501](#), [510/509](#), [510/511](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ 52. Document ID: US 5674427 A

L31: Entry 52 of 75

File: USPT

Oct 7, 1997

US-PAT-NO: 5674427

DOCUMENT-IDENTIFIER: US 5674427 A

TITLE: Composition for the treatment of dyed fabric

DATE-ISSUED: October 7, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Videb.ae butted.k; Thomas	Hellerup			DK
Westendorp; Walter H.	Loon op Zand			NL

US-CL-CURRENT: [252/8.91](#); [510/320](#), [510/392](#), [8/102](#), [8/107](#), [8/110](#), [8/115](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ 53. Document ID: US 5565006 A

L31: Entry 53 of 75

File: USPT

Oct 15, 1996

US-PAT-NO: 5565006

DOCUMENT-IDENTIFIER: US 5565006 A

TITLE: Method for the treatment of dyed fabric

DATE-ISSUED: October 15, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Videb.ae butted.k; Thomas	Hellerup			DK
Westendorp; Walter H.	Loon op Zand			NL

US-CL-CURRENT: 8/102; 510/300, 510/320, 510/392, 8/107, 8/110, 8/115

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 54. Document ID: US 5531927 A

L31: Entry 54 of 75

File: USPT

Jul 2, 1996

US-PAT-NO: 5531927

DOCUMENT-IDENTIFIER: US 5531927 A

TITLE: Stain removing compositions and methods of using the same

DATE-ISSUED: July 2, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peters; Donald F.	Lakewood	OH		

US-CL-CURRENT: 510/281; 510/280, 510/424, 510/432, 510/435, 510/505

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☐ 55. Document ID: US 5487838 A

L31: Entry 55 of 75

File: USPT

Jan 30, 1996

US-PAT-NO: 5487838

DOCUMENT-IDENTIFIER: US 5487838 A

TITLE: Reaction products of a boron compound and a phospholipid, and lubricant and aqueous fluids containing same

DATE-ISSUED: January 30, 1996

INVENTOR-INFORMATION:

☐ 58. Document ID: US 5064571 A

L31: Entry 58 of 75

File: USPT

Nov 12, 1991

US-PAT-NO: 5064571

DOCUMENT-IDENTIFIER: US 5064571 A

**** See image for Certificate of Correction ****

TITLE: Mixtures of fatty amido-amines from polyoxyalkyleneamines

DATE-ISSUED: November 12, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Speranza; George P.	Austin	TX		
Naylor; Carter G.	Austin	TX		
Lin; Jiang-Jen	Houston	TX		

US-CL-CURRENT: 516/45; 252/392, 252/61, 516/203, 516/915, 516/DIG.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 59. Document ID: US 4897251 A

L31: Entry 59 of 75

File: USPT

Jan 30, 1990

US-PAT-NO: 4897251

DOCUMENT-IDENTIFIER: US 4897251 A

TITLE: Catalytic removal of hydrogen sulphide from liquid sulphur

DATE-ISSUED: January 30, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Maurice; Jacques	Pau			FR
Fouque; Romain	Poey de Lescar			FR
Auriol; Jean-Louis	Pau			FR

US-CL-CURRENT: 423/578.1; 252/183.13, 502/164, 502/167, 502/168, 502/170, 502/172

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 60. Document ID: US 4891160 A

L31: Entry 60 of 75

File: USPT

Jan 2, 1990

US-PAT-NO: 4891160

DOCUMENT-IDENTIFIER: US 4891160 A

TITLE: Detergent compositions containing ethoxylated amines having clay soil removal/anti-redeposition properties

DATE-ISSUED: January 2, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vander Meer; James M.	Cincinnati	OH		

US-CL-CURRENT: 510/350; 510/321, 510/324, 510/341, 510/360, 510/475, 510/499,
510/502

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
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[Generate Collection](#)[Print](#)

Terms	Documents
L30 not l28	75

Display Format: [Change Format](#)[Previous Page](#)[Next Page](#)

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L31: Entry 61 of 75

File: USPT

Sep 19, 1989

US-PAT-NO: 4867895

DOCUMENT-IDENTIFIER: US 4867895 A

**** See image for Certificate of Correction ****

TITLE: Timed-release bleach coated with an amine with reduced dye damage

DATE-ISSUED: September 19, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Choy; Clement K.	Walnut Creek	CA		

US-CL-CURRENT: 510/513; 252/186.34, 252/186.35, 427/214, 427/220, 510/305, 510/307,
510/441, 510/530

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ **62. Document ID: US 4820436 A**

L31: Entry 62 of 75

File: USPT

Apr 11, 1989

US-PAT-NO: 4820436

DOCUMENT-IDENTIFIER: US 4820436 A

TITLE: Detergents for low laundering temperatures

DATE-ISSUED: April 11, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Andree; Hans	Leichlingen			DE
Baumann; Horst	Leichlingen			DE
Biermann; Manfred	Mulheim			DE
Jost; Frantisek	Duesseldorf			DE
Krause; Horst-Juergen	Duesseldorf			DE
Lange; Fritz	Essen			DE
Leiter; Herbert	Monheim			DE
Meffert; Alfred	Monheim			DE
Ploog; Uwe	Haan			DE
Schnegelberger; Harald	Leichlingen			DE
Smulders; Eduard	Hilden			DE
Sung; Eric	Monheim			DE
Syldatk; Andreas	Duesseldorf			DE
Uphues; Guenter	Monheim			DE
Vogt; Guenther	Toennisvorst			DE

US-CL-CURRENT: 510/309, 510/276, 510/306, 510/313, 510/315, 510/350, 510/361,
510/443, 510/499, 510/500, 510/501, 510/502

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☒ 63. Document ID: US 4728453 A

L31: Entry 63 of 75

File: USPT

Mar 1, 1988

US-PAT-NO: 4728453

DOCUMENT-IDENTIFIER: US 4728453 A

**** See image for Certificate of Correction ****

TITLE: Timed-release bleach coated with an inorganic salt and an amine with reduced dye damage

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Choy; Clement K.	Walnut Creek	CA		

US-CL-CURRENT: 252/186.34, 252/186.35, 427/214, 427/220

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☒ 64. Document ID: US 4597898 A

L31: Entry 64 of 75

File: USPT

Jul 1, 1986

US-PAT-NO: 4597898

DOCUMENT-IDENTIFIER: US 4597898 A

TITLE: Detergent compositions containing ethoxylated amines having clay soil removal/anti-redeposition properties

DATE-ISSUED: July 1, 1986

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vander Meer; James M.	Cincinnati	OH		

US-CL-CURRENT: 510/325; 510/321, 510/340, 510/341, 510/352, 510/423, 510/425, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RIMC
Draw Desc	Image									

☐ 65. Document ID: US 4587032 A

L31: Entry 65 of 75

File: USPT

May 6, 1986

US-PAT-NO: 4587032

DOCUMENT-IDENTIFIER: US 4587032 A

TITLE: Drain cleaner

DATE-ISSUED: May 6, 1986

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rogers; Thomas A.	Fairport	NY		

US-CL-CURRENT: 510/195; 510/261, 510/401, 510/421, 510/489, 510/500, 510/505

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RIMC
Draw Desc	Image									

☐ 66. Document ID: US 4548744 A

L31: Entry 66 of 75

File: USPT

Oct 22, 1985

US-PAT-NO: 4548744

DOCUMENT-IDENTIFIER: US 4548744 A

TITLE: Ethoxylated amine oxides having clay soil removal/anti-redeposition properties useful in detergent compositions

DATE-ISSUED: October 22, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Connor; Daniel S.	Cincinnati	OH	45247	

US-CL-CURRENT: 510/350; 510/321, 510/341, 510/475, 510/500, 510/503, 525/327.1, 525/328.2, 525/328.3, 525/328.4, 525/417, 525/437, 525/460, 525/523, 525/61, 528/341, 528/342, 528/347, 554/55, 554/64

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 67. Document ID: US 4456452 A

L31: Entry 67 of 75

File: USPT

Jun 26, 1984

US-PAT-NO: 4456452

DOCUMENT-IDENTIFIER: US 4456452 A

TITLE: Process for bleaching textiles and for combating microorganisms with sulphonated phthalocyanine carrying halogen or pseudohalogen substituents as photoactivator

DATE-ISSUED: June 26, 1984

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Holzle; Gerd	Liestal			CH
Reinert; Gerhard	Allschwil			CH
Polony; Rudolf	Basel			CH

US-CL-CURRENT: 8/103; 422/22, 422/28, 510/301, 540/136, 540/140, 8/101, 8/107, 8/111, 8/137

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 68. Document ID: US 4321167 A

L31: Entry 68 of 75

File: USPT

Mar 23, 1982

US-PAT-NO: 4321167

DOCUMENT-IDENTIFIER: US 4321167 A

TITLE: Heavy duty liquid detergent compositions containing alkoxyated alkylene diamines and fatty acids

DATE-ISSUED: March 23, 1982

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schmolka; Irving R.	Grosse Ile	MI		

US-CL-CURRENT: 510/337; 510/338, 510/340, 510/424, 510/437, 510/491, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 69. Document ID: US 4302246 A

L31: Entry 69 of 75

File: USPT

Nov 24, 1981

US-PAT-NO: 4302246

DOCUMENT-IDENTIFIER: US 4302246 A

**** See image for Certificate of Correction ****

TITLE: Solution and method for selectively stripping alloys containing nickel with gold, phosphorous or chromium from stainless steel and related nickel base alloys

DATE-ISSUED: November 24, 1981

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brindisi, Jr.; Frank A.	Madison	CT		
Bleeks; Thomas W.	New Haven	CT		
Sullivan; Thomas E.	Hamden	CT		

US-CL-CURRENT: 75/715; 134/3, 216/108, 216/90, 252/364, 252/79.4, 510/108, 510/264, 510/267, 510/269, 510/401, 510/402, 510/508

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 70. Document ID: US 4263179 A

L31: Entry 70 of 75

File: USPT

Apr 21, 1981

US-PAT-NO: 4263179

DOCUMENT-IDENTIFIER: US 4263179 A

**** See image for Certificate of Correction ****

TITLE: Heavy-duty liquid detergent compositions containing alkoxyated alkylene diamines

DATE-ISSUED: April 21, 1981

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schmolka; Irving R.	Grosse Ile	MI		

US-CL-CURRENT: 510/340; 510/337, 510/397, 510/424, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

Generate Collection

Print

Terms	Documents
L30 not l28	75

Display Format:

Change Format

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 71 through 75 of 75 returned.**☒ **71. Document ID: US 4244832 A**

L31: Entry 71 of 75

File: USPT

Jan 13, 1981

US-PAT-NO: 4244832

DOCUMENT-IDENTIFIER: US 4244832 A

TITLE: Phosphate-free machine dishwashing detergents useful at low temperatures

DATE-ISSUED: January 13, 1981

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kaneko; Thomas M.	Trenton	MI		

US-CL-CURRENT: 510/229; 510/381, 510/478, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ **72. Document ID: US 4243543 A**

L31: Entry 72 of 75

File: USPT

Jan 6, 1981

US-PAT-NO: 4243543

DOCUMENT-IDENTIFIER: US 4243543 A

**** See image for Certificate of Correction ****

TITLE: Stabilized liquid enzyme-containing detergent compositions

DATE-ISSUED: January 6, 1981

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Guilbert; C. Carol	St. Paul	MN		
Scepanski; William H.	Burnsville	MN		

US-CL-CURRENT: 510/234; 510/108, 510/277, 510/293, 510/321, 510/363, 510/393

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

☐ **73. Document ID: US 4192963 A**

L31: Entry 73 of 75

File: USPT

Mar 11, 1980

US-PAT-NO: 4192963
DOCUMENT-IDENTIFIER: US 4192963 A

TITLE: Grounding electrode and method of reducing the electrical resistance of soils

DATE-ISSUED: March 11, 1980

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koehmstedt; Paul L.	Richland	WA		

US-CL-CURRENT: 174/6; 106/277, 252/519.5, 252/519.53, 252/521.2, 252/521.5,
252/62.2, 405/263, 405/265

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 74. Document ID: US 4142999 A

L31: Entry 74 of 75

File: USPT

Mar 6, 1979

US-PAT-NO: 4142999
DOCUMENT-IDENTIFIER: US 4142999 A

TITLE: Stabilized liquid enzyme containing compositions

DATE-ISSUED: March 6, 1979

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bloching; Helmut	Hilden			DE
Krings; Peter	Krefeld			DE
Pfeiffer; Hans	Haan			DE

US-CL-CURRENT: 510/393; 435/188, 510/321, 510/423, 510/424, 510/425, 510/499

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 75. Document ID: EP 112593 A2

L31: Entry 75 of 75

File: EPAB

Jul 4, 1984

PUB-NO: EP000112593A2
DOCUMENT-IDENTIFIER: EP 112593 A2

TITLE: Detergent compositions containing ethoxylated amines having clay soil
removal/anti-redeposition properties.

PUBN-DATE: July 4, 1984

INVENTOR-INFORMATION:

NAME

COUNTRY

VANDER, MEER JAMES MICHAEL

RUBINGH, DONN NELTON

GOSSELINK, EUGENE PAUL

US-CL-CURRENT: 510/123

INT-CL (IPC): C11D 3/30

EUR-CL (EPC): C11D001/44; C11D003/30, C08G065/26 , C11D003/37

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw Desc	Image									

[Generate Collection](#)[Print](#)

Terms	Documents
L30 not l28	75

Display Format: [Change Format](#)[Previous Page](#)[Next Page](#)

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L31: Entry 25 of 75

File: USPT

Sep 3, 2002

DOCUMENT-IDENTIFIER: US 6444631 B1

TITLE: Dishwashing detergent product having a ultraviolet light resistant bottle

Brief Summary Text (4):

Typical commercial hand dishwashing compositions incorporate divalent ions (Mg, Ca) to ensure adequate grease performance in soft water. However, the presence of divalent ions in formulas containing anionic, nonionic, or additional surfactants (e.g., alkyl dimethyl amine oxide, alkyl ethoxylate, alkanoyl glucose amide, alkyl betaines) leads to slower rates of product mixing with water (and hence poor flash foam), poor rinsing, and poor low temperature stability properties. Moreover, preparation of stable dishwashing detergents containing Ca/Mg is very difficult due to the precipitation issues associated with Ca and Mg as pH increases.

Brief Summary Text (5):

In the past, diacid salts of diamines have been employed in dishwashing detergent compositions. Under these conditions, these materials have several limitations, one of which is that the cleaning benefits are confined to relatively low hardness (<70 ppm) levels. The prior art also suggests use of a C.sub.2 spacer, e.g., ethylene diamine diacid salt and ethoxylated diamines, both of which severely limit performance. It has been determined that the use of certain organic diamines, as outlined in detail below, with surfactants in dishcare compositions with pH's on the order of 8 to 12 (as measured at 10% solution) leads to improved cleaning of tough food stains and removal of grease/oil when compared to the use of Mg or Ca ions in conventional detergent compositions. Unexpectedly, these organic diamines also improve suds stability in the presence of soils, especially soils containing fatty acids and proteins. Further, the strong grease removal performance of the diamines discussed herein allows reduction/elimination of Mg/Ca ions from the formulation while maintaining benefits in grease performance. The removal of Mg/Ca additionally leads to improved benefits in dissolution, rinsing and low temperature product stability.

Brief Summary Text (39):

The surfactants used in the detergent composition of the invention are selected from anionic, amphoteric, or nonionic surfactants or mixtures thereof. Preferred anionic surfactants for use herein include linear alkylbenzene sulfonate, alpha olefin sulfonate, paraffin sulfonates, methyl ester sulfonates, alkyl sulfates, alkyl alkoxy sulfates, alkyl sulfonates, alkyl alkoxyated sulfates, sarcosinates, alkyl alkoxy carboxylate, and taurinates. Preferred nonionic surfactants useful herein are selected from the group consisting of alkyl dialkyl amine oxide, alkyl ethoxylate, alkanoyl glucose amides, alkylpolyglucosides, alkyl betaines, and mixtures thereof. In one highly preferred embodiment, the anionic surfactants are selected from the group consisting of alkyl sulfates, alkyl alkoxy sulfates, and mixtures thereof. In another highly preferred embodiment, the amphoteric surfactants are selected from the group consisting of amine oxide, alkyl betaine, and mixtures thereof. In yet another highly preferred embodiment the nonionic surfactants are selected from group consisting of alkanoyl glucose amides, alkyl polyglucosides, ethoxylated fatty alcohols and mixtures thereof. If a mixture of anionic surfactant and nonionic surfactant is used, the weight ratio of anionic:nonionic is preferably from about 50:1 to about 1:50, more preferably from about 50:1 to about 3:1. Also, when mixtures of anionic and nonionic surfactants are present, the hand dishwashing detergent composition herein preferably further comprise protease enzyme, amylase enzyme, or mixtures thereof. Further, these hand dishwashing detergent embodiments

preferably further comprises a hydrotrope. Suitable hydrotropes include sodium, potassium, ammonium or water-soluble substituted ammonium salts of toluene sulfonic acid, naphthalene sulfonic acid, cumene sulfonic acid, xylene sulfonic acid.

Current US Class (2):

510

CLAIMS:

11. The dishwashing detergent product according to claim 1 wherein said surfactant is a nonionic surfactant selected from the group consisting of alkyl dialkyl amine oxide, alkyl ethoxylate, alkanoyl glucose amide, alkyl betaines, alkyl polyglucoside, and mixtures thereof.

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L31: Entry 29 of 75

File: USPT

Oct 30, 2001

DOCUMENT-IDENTIFIER: US 6310025 B1

TITLE: Laundry pretreatment process and bleaching compositions

Abstract Text (1):

The present invention relates to a process for pretreating soiled fabrics with a liquid composition comprising a peroxygen bleach and a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, and ethoxylated polyamine, an ethoxylated amine polymer and mixtures thereof. This invention also discloses liquid compositions suitable for pretreating fabrics, comprising a peroxygen bleach, a surfactant, and a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, an ethoxylated polyamine, an ethoxylated amine polymer and mixtures thereof, said composition being formulated either as an emulsion or a microemulsion.

Brief Summary Text (11):

It has now been found that improved stain removal performance is obtained, by using a liquid composition comprising a peroxygen bleach and a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, an ethoxylated polyamine, an ethoxylated amine polymer and mixture thereof, as described hereinafter, to pretreat soiled fabrics. Indeed, the addition of such a soil dispersing agent, in a liquid composition comprising a peroxygen bleach, and optionally a bleach activator, delivers improved stain removal performance on various types of stains including greasy stains, enzymatic stains, clay/mud stains, and the like, under pretreatment conditions, as compared to the stain removal performance delivered by the same composition without said soil dispersing agent. Also, it has surprisingly been found that the liquid compositions comprising both the peroxygen bleach and said soil dispersing agent, when used to pretreat fabrics, provide improved bleaching efficacy, as compared to the same compositions without said soil dispersing agent. Thus, it has been found that the addition of a single compound, i.e., such a soil dispersing agent, in a peroxygen bleach-containing composition, delivers both improved stain removal performance and improved bleaching performance. Furthermore, it has been found that this improved stain removal performance on various stains is maintained even for peroxygen bleach-containing compositions having undergone long storage time. It is thus speculated that the oxidized form of the soil suspending agent that may have formed in the presence of a peroxygen bleach under long storage time and/or elevated temperature still provides improved stain removal performance on various types of stains. Thus, in its broadest aspect, the present invention encompasses a process for bleaching a fabric with a liquid composition comprising from 0.01% to 15% by weight of the total composition of a peroxygen bleach, and a soil dispersing agent, said process comprising the steps of applying said liquid composition in its neat form onto at least one portion of said fabric, optionally allowing said composition to remain in contact with said fabric and then washing said fabric.

Brief Summary Text (12):

Furthermore, it has been found that the addition of a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, an ethoxylated polyamine, an ethoxylated amine polymer and mixture thereof, in a liquid composition formulated either as an emulsion or microemulsion, comprising a peroxygen bleach and a surfactant, reduces the viscosity of said composition, whatever the viscosity was before the addition of said soil dispersing agent.

Actually, an advantage of the liquid compositions of the present invention formulated either as an emulsion or a microemulsion, is that they deliver improved stain removal performance and improved bleaching performance while delivering acceptable viscosity, without the need to add viscosity control agents. In other words, the present invention allows to formulate emulsions or microemulsions with improved overall stain removal/bleaching performance and desirable physical characteristics at reduced costs, i.e., without adding any viscosity control agent that would raise the cost formula and bulk to the compositions without contributing to the bleaching/cleaning performance of said compositions.

Brief Summary Text (15):

European patent application number 95870079.1 discloses laundry compositions suitable for pretreating fabrics comprising polyamines and peroxygen bleach. No ethoxylated amines, ethoxylated polyamines or ethoxylated amine polymers are disclosed.

Brief Summary Text (16):

U.S. application Ser. No. 08/663501 discloses pretreater compositions with particular chelants, a peroxygen bleach, and optional ingredients like bleach activators, polymeric soil releasing agents like sulfonated poly-ethoxy/propoxy end-capped ester oligomer. However, no ethoxylated amines, ethoxylated polyamines, or ethoxylated amine polymers are disclosed.

Brief Summary Text (17):

EP-A-271 312 discloses laundry compositions comprising a peroxyacid bleach and a soil release agent like particular alkyl and hydroxyalkyl ethers of cellulose, polymers comprising ethylene terephthalate and polyethylene oxide terephthalate. No ethoxylated amines, ethoxylated polyamines or ethoxylated amine polymers are disclosed.

Brief Summary Text (19):

EP-A-112 593 discloses detergent compositions (pH=6 to 8.5) comprising ethoxylated mono- or diamines, ethoxylated polyamines and/or ethoxylated amine polymers as a clay soil removal/antiredeposition agent. Said compositions may be used in laundry pretreatment application. No peroxygen bleaches are disclosed.

Brief Summary Text (26):

(4) ethoxylated amine polymers having the general formula:

Brief Summary Text (30):

The present invention encompasses a liquid composition suitable for pretreating fabrics, comprising a peroxygen bleach, a surfactant and a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, an ethoxylated polyamine, an ethoxylated amine polymers and mixture thereof as previously defined, said composition being formulated either as an emulsion or a microemulsion.

Detailed Description Text (22):

As an essential element the compositions to be used according to the present invention comprise a soil dispersing agent selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, ethoxylated amine polymers, as previously defined and mixtures thereof. Indeed, the presence of said soil dispersing agent contributes to the excellent cleaning and bleaching benefits of the compositions used according to the present invention.

Detailed Description Text (25):

alkylene, hydroxyalkylene, alkenylene, alkarylene or oxyalkylene. R.sup.1 is preferably C.sub.2 -C.sub.6 alkylene for the ethoxylated diamines and amine polymers. For the ethoxylated diamines, the minimum degree of ethoxylation required for suitable soil removal/anti-redeposition properties decreases on going from C.sub.2 -C.sub.3 alkylene (ethylene, propylene) to hexamethylene. However, for the ethoxylated amine polymers, in particular the ethoxylated polyalkyleneamines and polyalkyleneimines, especially at higher molecular weights, C.sub.2 -C.sub.3 alkylene (ethylene, propylene) are preferred for R.sup.1 with ethylene being most preferred. Each R.sup.2 is preferably the moiety --L--X.

Detailed Description Text (26):

In the preceding formulas, hydrophilic chain L usually consists entirely of the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 --O).sub.n]. The moieties --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- of the polyoxyalkylene moiety can be mixed together or preferably form blocks of --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- moieties. R.sup.5 is preferably C.sub.3 H.sub.6 (propylene). For the ethoxylated polyamines and amine polymers, m is preferably from 0 to 5. For all ethoxylated amines of the present invention, m is most preferably 0, i.e. the polyoxyalkylene moiety consists entirely of the moiety --(CH.sub.2 CH.sub.2 O).sub.n --. The moiety --(CH.sub.2 CH.sub.2 O).sub.n -- preferably comprises at least 85% by weight of the polyoxyalkylene moiety and most preferably 100% by weight (m is 0).

Detailed Description Text (27):

In the preceding formula, X can be any compatible nonionic group, anionic group or mixture thereof. Suitable nonionic groups include C.sub.1 -C.sub.4 alkyl or hydroxyalkyl ester or ether groups, preferably acetate or methyl ether, respectively; hydrogen (H); or mixtures thereof. The particularly preferred nonionic group is H. With regard to anionic groups, PO.sub.3.sup.-2 and SO.sub.3.sup.- are suitable. The particularly preferred anionic group is SO.sub.3.sup.-. It has been found that the percentage of anionic groups relative to nonionic groups can be important to the soil removal/anti-redeposition properties provided by the ethoxylated amine. A mixture of from 0 to 30% anionic groups and from 70 to 100% nonionic groups provides preferred properties. A mixture of from 5 to 10% anionic groups and from 90 to 95% nonionic groups provides the most preferred properties. Usually, a mixture of from 0 to 80% anionic groups and from 20 to 100% nonionic groups provides suitable soil removal/anti-redeposition properties.

Detailed Description Text (30):

Methods for making ethoxylated amines are for example described in EP-A-112 593.

Detailed Description Text (39):

Preferred ethoxylated amine polymers are the ethoxylated C.sub.2 -C.sub.3 polyalkyleneamines and polyalkyleneimines. Particularly preferred ethoxylated polyalkyleneamines and polyalkyleneimines are the ethoxylated polyethyleneamines (PEA's) and polyethyleneimines (PEI's). These preferred compounds comprise units having the general formula: ##STR10##

Detailed Description Text (52):

The present invention also encompasses a liquid composition suitable for pretreating fabrics, comprising a peroxygen bleach, a soil dispersing agent selected from the group consisting of an ethoxylated monoamine, an ethoxylated diamine, an ethoxylated polyamine, an ethoxylated amine polymer and mixture thereof, as defined hereinbefore, and a surfactant, said composition being formulated either as an emulsion or a microemulsion.

Current US Class (1):

510

CLAIMS:

1. A process of bleaching a fabric with a liquid composition having a pH from 1 to 5 comprising from 0.01% to 15% by weight of the total composition of peroxygen bleach, and a soil dispersing agent which is an ethoxylated amine polymer of the formula: ##STR18##

whereas X is a Hydrogen; w is 1 or 0; x+y+z is at least 2, y+z is at least 2; and n is at least 3; said polymer selected from the group consisting of ethoxylated polyethyleneamines having a molecular weight of from 140 to 310 prior to ethoxylation and ethoxylated polyethyleneimines having a molecular weight of 600 to 1800 prior to ethoxylation, said process comprising the step of applying said composition in its neat form onto at least a portion of the fabric, before said fabric is washed.

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L31: Entry 31 of 75

File: USPT

Jul 10, 2001

DOCUMENT-IDENTIFIER: US 6258765 B1

TITLE: Binding agent for solid block functional material

Detailed Description Text (24):

Nonionic surfactants useful in cleaning compositions, include those having a polyalkylene oxide polymer as a portion of the surfactant molecule. Such nonionic surfactants include, for example, chlorine-, benzyl-, methyl-, ethyl-, propyl-, butyl- and other like alkyl-capped polyethylene glycol ethers of fatty alcohols; polyalkylene oxide free nonionics such as alkyl polyglycosides; sorbitan and sucrose esters and their ethoxylates; alkoxylated ethylene diamine; alcohol alkoxylates such as alcohol ethoxylate propoxylates, alcohol propoxylates, alcohol propoxylate ethoxylate propoxylates, alcohol ethoxylate butoxylates, and the like; nonylphenol ethoxylate, polyoxyethylene glycol ethers and the like; carboxylic acid esters such as glycerol esters, polyoxyethylene esters, ethoxylated and glycol esters of fatty acids, and the like; carboxylic amides such as diethanolamine condensates, monoalkanolamine condensates, polyoxyethylene fatty acid amides, and the like; and polyalkylene oxide block copolymers including an ethylene oxide/propylene oxide block copolymer such as those commercially available under the trademark PLURONIC (BASF-Wyandotte), and the like; and other like nonionic compounds. Silicone surfactants such as the ABIL B8852 can also be used.

Detailed Description Text (25):

Cationic surfactants useful for inclusion in a cleaning composition for sanitizing or fabric softening, include amines such as primary, secondary and tertiary monoamines with C.sub.18 alkyl or alkenyl chains, ethoxylated alkylamines, alkoxylates of ethylenediamine, imidazoles such as a 1-(2-hydroxyethyl)-2-imidazoline, a 2-alkyl-1-(2-hydroxyethyl)-2-imidazoline, and the like; and quaternary ammonium salts, as for example, alkylquaternary ammonium chloride surfactants such as n-alkyl(C.sub.12 -C.sub.18)dimethylbenzyl ammonium chloride, n-tetradecyldimethylbenzylammonium chloride monohydrate, a naphthalene-substituted quaternary ammonium chloride such as dimethyl-1-naphthylmethylammonium chloride, and the like; and other like cationic surfactants.

Current US Class (1):510

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L31: Entry 34 of 75

File: USPT

Feb 6, 2001

DOCUMENT-IDENTIFIER: US 6184194 B1

TITLE: High foaming, grease cutting light duty liquid detergent having antibacterial properties comprising proton donating agent

Brief Summary Text (14):

To achieve the foregoing and other objects and in accordance with the purpose of the present invention, as embodied and broadly described herein the novel, high foaming, light duty liquid detergent of this invention comprises a C.sub.4 -C.sub.7 alkylene glycol, paraffin sulfonate, an alpha olefin sulfonate, a proton donating agent, a sultaine surfactant, magnesium ions, a C.sub.1 -C.sub.4 alkanol, and water wherein the composition does not contain an alkyl benzene sulfonate surfactant, an ethoxylated alkyl ether sulfate surfactant, an alkyl sulfate, a poly (oxyethylene) diamine, an alkyl polyglucoside surfactant, wheat protein, polyethylene glycol, polypropylene oxide, a glycol ether solvent, an ethoxylated and/or propoxylated nonionic surfactant, an amine oxide surfactant, a mono- or di-saccharides, a polyoxyalkylene glycol fatty acid, a builder, a polymeric thickener, a clay, a fatty acid alkanolamide, abrasive, silicas, triclosan, alkaline earth metal carbonates, alkyl glycine surfactant or cyclic imidinium surfactant wherein the composition has good grease cutting ability and disinfecting properties.

Brief Summary Text (24):

(h) the balance being water wherein the composition does not contain a glycol ether solvent, an alkyl polyglucoside surfactant, polyethylene glycol, wheat protein, polypropylene oxide, an ethoxylated and/or propoxylated nonionic surfactant, an amine oxide surfactant, poly (oxyethylene) diamine, an alkyl benzene sulfonate surfactant, an ethoxylated alkyl ether sulfate surfactant, a polyoxyalkylene glycol fatty acid, a mono- or di-saccharides, a builder, a polymeric thickener, a clay, a fatty acid alkanol amide, abrasive, silicas, triclosan, alkaline earth metal carbonates, alkyl glycine surfactant, cyclic imidinium surfactant.

Current US Class (1):

510

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L31: Entry 36 of 75

File: USPT

Jan 9, 2001

DOCUMENT-IDENTIFIER: US 6172024 B1

TITLE: High foaming grease cutting light duty liquid detergent comprising a poly (oxyethylene) diamine

Abstract Text (1):

A light duty, liquid comprising: a paraffin sulfonate, an alpha olefin sulfonate, a positively charged polymer such as a poly (oxyethylene) diamine, a sultaine surfactant, a magnesium containing inorganic compound, and water.

Brief Summary Text (12):

It has now been found that a high foaming liquid detergent properties can be formulated with a paraffin sulfonate, a positively charged polymer at low concentrations such as a poly (oxyethylene) diamine, an alpha olefin sulfonate, a sultaine surfactant, a C.sub.5 -C.sub.7 alkylene glycol, magnesium ions, a C.sub.1 -C.sub.4 alkanol, and water.

Brief Summary Text (13):

Accordingly, one object of this invention is to provide novel, high foaming, light duty liquid detergent compositions containing an alpha olefin sulfonate surfactant and a poly (oxyethylene) diamine.

Brief Summary Text (14):

To achieve the foregoing and other objects and in accordance with the purpose of the present invention, as embodied and broadly described herein the novel, high foaming, light duty liquid detergent of this invention comprises a C.sub.4 -C.sub.7 alkylene glycol, an alpha olefin sulfonate, a poly (oxyethylene) diamine, a sultaine surfactant, magnesium ions, a C.sub.1 -C.sub.4 alkanol, and water wherein the composition does not contain an alkyl benzene sulfonate surfactant, an ethoxylated alkyl ether sulfate surfactant, an alkyl sulfate, a glycol ether solvent, an ethoxylated and/or propoxylated nonionic surfactant, an amine oxide surfactant, a mono- or di-saccharides, a polyoxyalkylene glycol fatty acid, a builder, a polymeric thickener, a clay, a fatty acid alkanolamide, abrasive, silicas, triclosan, alkaline earth metal carbonates, alkyl glycine surfactant or cyclic imidinium surfactant wherein the composition has good grease cutting ability and disinfecting properties.

Brief Summary Text (24):

(h) the balance being water wherein the composition does not contain a glycol ether solvent, an alkyl polyglucoside surfactant, an ethoxylated and/or propoxylated nonionic surfactant, an amine oxide surfactant, an alkyl benzene sulfonate surfactant, an ethoxylated alkyl ether sulfate surfactant, a polyoxyalkylene glycol fatty acid, a mono- or di-saccharides, a builder, a polymeric thickener, a clay, a fatty acid alkanol amide, abrasive, silicas, triclosan, alkaline earth metal carbonates, alkyl glycine surfactant, cyclic imidinium surfactant.

Current US Class (1):

510

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L31: Entry 39 of 75

File: USPT

Nov 28, 2000

DOCUMENT-IDENTIFIER: US 6153577 A
TITLE: Polyoxyalkylene surfactants

Brief Summary Text (4):

Conventional deterative surfactants comprise molecules having a water-solubilizing substituent (hydrophilic group) and an oleophilic substituent (hydrophobic group). Such surfactants typically comprise hydrophilic groups such as carboxylate, sulfate, sulfonate, amine oxide, polyoxyethylene, and the like, attached to an alkyl, alkenyl or alkaryl hydrophobe usually containing from about 10 to about 20 carbon atoms. Accordingly, the manufacturer of such surfactants must have access to a source of hydrophobe groups to which the desired hydrophile can be attached by chemical means. The earliest source of hydrophobe groups comprised the natural fats and oils, which were converted into soaps (i.e., carboxylate hydrophile) by saponification with base. Coconut oil and palm oil are still used to manufacture soap, as well as to manufacture the alkyl sulfate ("AS") class of surfactants. Other hydrophobes are available from petrochemicals, including alkylated benzene which is used to manufacture alkyl benzene sulfonate surfactants ("LAS").

Detailed Description Text (138):

The invention also encompasses amine oxides wherein $x+y+z$ is different from zero, specifically $x+y+z$ is from about 1 to about 10, R_{sup.1} is a primary alkyl group containing 8 to about 24 carbons, preferably from about 12 to about 16 carbon atoms; in these embodiments $y+z$ is preferably 0 and x is preferably from about 1 to about 6, more preferably from about 2 to about 4; EO represents ethyleneoxy; PO represents propyleneoxy; and BO represents butyleneoxy. Such amine oxides can be prepared by conventional synthetic methods, e.g., by the reaction of alkylethoxysulfates with dimethylamine followed by oxidation of the ethoxylated amine with hydrogen peroxide.

Detailed Description Text (171):

Clay Soil Removal/Anti-redeposition Agents--The compositions of the present invention can also optionally contain water-soluble ethoxylated amines having clay soil removal and antiredeposition properties. Granular detergent compositions which contain these compounds typically contain from about 0.01% to about 10.0% by weight of the water-soluble ethoxylates amines; liquid detergent compositions typically contain about 0.01% to about 5%.

Detailed Description Text (172):

The most preferred soil release and anti-redeposition agent is ethoxylated tetraethylenepentamine. Exemplary ethoxylated amines are further described in U.S. Pat. No. 4,597,898, VanderMeer, issued Jul. 1, 1986. Another group of preferred clay soil removal-antiredeposition agents are the cationic compounds disclosed in European Patent Application 111,965, Oh and Gosselink, published Jun. 27, 1984. Other clay soil removal/antiredeposition agents which can be used include the ethoxylated amine polymers disclosed in European Patent Application 111,984, Gosselink, published Jun. 27, 1984; the zwitterionic polymers disclosed in European Patent Application 112,592, Gosselink, published Jul. 4, 1984; and the amine oxides disclosed in U.S. Pat. No. 4,548,744, Connor, issued Oct. 22, 1985. Other clay soil removal and/or anti redeposition agents known in the art can also be utilized in the compositions herein. See U.S. Pat. No. 4,891,160, VanderMeer, issued Jan. 2, 1990 and WO 95/32272, published Nov. 30, 1995. Another type of preferred antiredeposition agent includes the carboxy methyl cellulose (CMC) materials. These materials are

well known in the art.

Detailed Description Paragraph Table (14):

TABLE II Non-aqueous based heavy duty liquid laundry detergent compositions (A to E) which comprise the mid-chain branched surfactants of the present invention are presented below. Non-Aqueous Liquid Detergent Composition with Bleach Wt % Wt % Wt % Wt % Wt % Component A B C D E

30	34	BPP	19	19	19	19	19	Citrate	3	3	3	3	3	Bleach activator	5.9	5.9	5.9	5.9	5.9	LAS, From Above	16	13	8	8	2	MB16AE7	22	25	28
Carbonate	9	9	9	9	9	MA/AA	3	3	3	3	3	3	3	Colored speckles	0.4	0.4	0.4	0.4	0.4	EDDS	1	1	1	1	1	1	1	1	1
1	1	Cellulase Prills	0.1	0.1	0.1	0.1	0.1	0.1	Amylase Prills	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	Optional									
Ethoxylated diamine	1.3	1.3	1.3	1.3	1.3	1.3	quat	Perborate	15	15	15	15	15	Optionals															

including: balance balance balance balance balance balance brightener, colorant, perfume, thickener, suds suppressor, colored speckles etc. 100% 100% 100% 100% 100%

Current US Class (1):

510

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L31: Entry 43 of 75

File: USPT

Jun 27, 2000

DOCUMENT-IDENTIFIER: US 6080713 A

**** See image for Certificate of Correction ****

TITLE: Method for cleaning hydrocarbon-containing greases and oils from fabric in laundry washing applications

Abstract Text (1):

This invention is directed to an improved method for removing hydrocarbon-containing greases and oils from fabrics. The invention consists of preparing a detergent composition and washing the fabric to be cleaned with the detergent composition. Broadly, the detergent composition consists of from 5 to 70% by weight of a polyalkoxylated amine and from 95-30 by weight of a water-soluble nonionic surfactant. The invention has desirable foamability characteristics.

Brief Summary Text (19):

The detergent composition of the inventive method comprises from 5 to 50% by weight of a polyalkoxylated amine and from 95-50% by weight of a nonionic water-soluble surfactant. The polyalkoxylated amine has a general structural formula selected from the group consisting of: ##STR1## wherein R.sup.1 is selected from an alkyl, aryl or alkylaryl group having between 6 and 22 carbon atoms, R.sup.2 is from 0 to 7 moles of alkoxylation

Brief Summary Text (22):

As used throughout the specification and claims, terms such as "between 6 and 22 carbon atoms," C3 to C10 and C.sub.1-5 are used to designate carbon atom chains of varying lengths and to indicate that various conformations are acceptable including branched, cyclic and linear conformations. The terms are further intended to designate that various degrees of saturation are acceptable. The inventive polyalkoxylated amines and the water soluble nonionic surfactants set forth above may be isolated or present within a mixture and remain within the scope of the invention.

Brief Summary Text (26):

As will be discussed in the Examples below, the detergent composition is highly effective in solubilizing, emulsifying and removing oily and greasy soils from fabric. The inventive alkoxylated amines and nonionic surfactants when combined within a specified weight ratio range unexpectedly and synergistically improve oily soil removal from fabrics.

Brief Summary Text (27):

Without wishing to be bound by any particular theory, the cleaning performance provided by the inventive detergent composition is believed to be a function of the two components of the proposed composition, namely the stable self-dispersing alkoxylated amine and the nonionic surfactant. The alkoxylated amines of the invention are notably dispersible in water and form stable hydrophobic aqueous dispersions. When the surface active alkoxylated amines described herein are combined with an optimum ratio (i.e., quantity) of a water soluble nonionic surfactant under typical laundry washing conditions, the result is the formation of a dynamic aqueous hydrophobic micellar detergent solution which enhances the removal and aqueous emulsification of hydrophobic oily soils from fabric. Most notably is the significant hydrophobic degreasing performance imparted as in the case of removal of motor oil from cotton polyester fabrics disclosed in the examples below.

Brief Summary Text (29):

As summarized above, the detergent composition comprises from 5 to 50% by weight of a polyalkoxylated amine and from 95-50% by weight of a water-soluble nonionic surfactant. The polyalkoxylated amine has a general structural formula selected from the group consisting of: ##STR3## wherein R.sup.1 is selected from an alkyl, aryl or alkylaryl group having between 6 and 22 carbon atoms, R.sup.2 is from 0 to 7 moles of alkoxylated units, n is 0 or 1, R.sup.3 and R.sup.4 are each selected from H and from 1 to 15 moles of alkoxylated units such that R.sup.3 and R.sup.4 are not both H, and ##STR4## wherein R.sup.5 is selected from an alkyl, aryl or alkylaryl group having between 6 and 22 carbon atoms, R.sup.6 is from 0 to 7 moles of alkoxylated units, n is 0 or 1, R.sup.7, R.sup.8 and R.sup.9 are each selected from H and from 1 to 15 moles of alkoxylated units such that R.sup.7, R.sup.8 and R.sup.9 are not each H.

Brief Summary Text (31):

Tomah Products, Inc. of Milton, Wis. manufactures and sells polyalkoxylated amines useful in practicing the invention. Examples of suitable Tomah polyalkoxylated amines include E-17-5, E-14-2, E-DT-3 and P-DT-2.

Brief Summary Text (32):

A wide range of nonionic water-soluble surfactants are suitable for use in the invention. Such surfactants include alkoxylated alkyl phenols, alkoxylated alcohols, polypropylene glycol alkoxylates, alkoxylated nonionic diamines and alkoxylated glycosides.

Brief Summary Text (38):

Preferred alkoxylated nonionic diamines include the condensation products of ethylene oxide with the product resulting from the reaction of propylene oxide and ethylenediamine. The hydrophobic moiety of these products consists of the reaction product of ethylenediamine and excess propylene oxide, and generally has a molecular weight of from about 2500 to about 3000. This hydrophobic moiety is condensed with ethylene oxide to the extent that the condensation product contains from about 40% to about 80% by weight of polyoxyethylene and has a molecular weight of from about 5,000 to about 11,000. Preferred alkoxylated diamines are selected from the group consisting of block polymers of propylene oxide and block polymers of ethylene oxide. Commercial examples of this type of nonionic surfactant include certain of the commercially-available Tetronic.TM. compounds, marketed by BASF.

Brief Summary Text (45):

It is preferred that the polyalkoxylated amine consist of from about 10-40% by weight of the composition and that the nonionic surfactant consist of from about 90-60% by weight of the composition. Most preferably, the polyalkoxylated amine consists of from about 30-40% by weight of the composition and the nonionic surfactant consists of from about 70-60% by weight of the composition.

Detailed Description Text (11):

A detergent composition consisting of a blend of two main components was prepared. The first component was the nonionic surfactant nonylphenol 9 mole ethoxylate ("NP-9EO") sold by Union Carbide under the name Tergitol.RTM. NP-9 and the second component was a blended polyalkoxylated amine consisting of polyethoxylated (2) isodecyloxypropylamine prepared and sold by Tomah Products as E-14-2.

Detailed Description Text (13):

Example 1 demonstrates that an exemplary detergent composition of the invention which includes a nonionic surfactant (NP-9EO) and a stable self-dispersing alkoxylated amine (Tomah E-14-2) is effective in removal of hydrocarbon-containing motor oil. The data further show that the effectiveness of the exemplary detergent composition varies depending on the component ratio. As shown in test number 7 of Table 1, an exemplary detergent composition with a ratio of 70% nonionic surfactant and 30% polyalkoxylated amine is most effective at removing the motor oil for this surfactant pair.

Detailed Description Text (16):

Exemplary detergent compositions were again prepared. As set forth in Table 2 below, tests 1-6 were conducted with detergent compositions consisting of either a nonionic

surfactant or a polyalkoxylated amine. Table 3 shows that tests 7-13 were conducted with exemplary detergent compositions having the nonionic surfactant NP-9EO and varying alkoxylated amine blends.

Detailed Description Text (17):

The 13 tests of Example 2 were performed using the same protocol as the tests of Example 1 above. The tests were repeated with the varying ratios of the nonionic surfactant and alkoxylated amine as set forth in Table 3 below and the swatches were then analyzed to determine the percent soil removed. The data are presented in Tables 2 and 3 below.

Detailed Description Text (18):

Example 2, Tables 2 and 3, demonstrates that the performance of the exemplary detergent compositions and the optimal component ratio varies depending on the nonionic surfactant and the alkoxylated amine used to prepare the detergent composition. The data also show that the exemplary surfactants consisting of a blend of nonionic and alkoxylated amine surfactants generally outperform detergent compositions consisting of only a nonionic surfactant or alkoxylated amine surfactant.

Detailed Description Text (23):

Example 3 demonstrates that standard alkaline builders may have a negative affect on the degreasing synergy of an exemplary nonionic/alkoxylated amine surfactant composition. The tergotometer data show that the presence of alkaline builders in Formulation 6 decreases the percent oil removal versus Formulation 2 in which no builders are present. However, the presence of the builder triethanol amine in Formulation 4 only slightly reduces the oil-removal ability of the detergent composition. These data suggest that inclusion of additives, such as builders, are consistent with the present invention in that they may expand the range of other types of stains (such as dust sebum, carbon, etc.) which can be removed without significant loss of ability to remove oily and greasy substances. The compatibility of the detergent of the inventive method with other components broadens the potential applications for the invention.

Detailed Description Paragraph Table (2):

TABLE 2		Performance of Isolated Alkoxylated Amine or Nonionic <u>Surfactants</u> Test %-Soil Number <u>Surfactant</u> Removal	
	1	Polyethoxylated (3)	0.69
isotridecyloxypropyl, 1,3 diaminopropane	2	Polyethoxylated (5)	26.82
isotridecyloxypropylamine	3	Polyethoxylated (10)	25.79
Polyethoxylated (2) coco amine	-20.54	5 Polyethoxylated (5) coco amine	24.02
Nonylphenol 9 mole ethoxylate	23.44	6	

Detailed Description Paragraph Table (3):

TABLE 3		Performance of Blended Exemplary Nonionic/Alkoxylated Amine <u>Surfactants</u> Test Nonylphenol 9 Mole Ethoxylate/ %-Soil Number <u>Alkoxylated Amine</u> Blends Removal	
Polyethoxylated (5) isodecyloxy-	28.77	propylamine (70/30 ratio)	8 Polyethoxylated (5) isodecyloxy-
30.85	propylamine (60/40 ratio)	9 Polyethoxylated (10) isotridecyl-	35.52
oxypropylamine (60/40 ratio)	10	Polyethoxylated (3) isotridecyl-	34.33
oxypropyl, 1,3 diaminopropane (70/30 ratio)	11	Polyethoxylated (2) coco amine	38.05
(70/30 ratio)	12	Polyethoxylated (2) coco amine	18.03
(60/40 ratio)	13	Polyethoxylated (5) coco amine	27.34
(60/40 ratio)			

Current US Class (1):

510

CLAIMS:

1. A method for removing hydrocarbon-containing greases and oils from fabric in a laundry washing process comprising the steps of:

preparing a concentrated detergent composition consisting essentially of:

about 10-40% by weight of a stable, self-dispersing polyalkoxylated amine having a general structural formula selected from the group consisting of: ##STR5## wherein R.sup.1 is selected from an alkyl, aryl or alkylaryl group having between 6 and 22 carbon atoms;

R.sup.2 is from 0 to 7 moles of alkoxyated units;

n is 0 or 1,

R.sup.3 and R.sup.4 are each selected from H and from 1 to 15 moles of alkoxyated units such that R.sup.3 and R.sup.4 are not both H; and ##STR6## wherein R.sup.5 is selected from an alkyl, aryl or alkylaryl group having between 6 and 22 carbon atoms;

R.sup.6 is from 0 to 7 moles of alkoxyated units;

n is 0 or 1;

R.sup.7, R.sup.8 and R.sup.9 are each selected from H and from 1 to 15 moles of alkoxyated units such that R.sup.7, R.sup.8 and R.sup.9 are not each H and mixtures thereof; and

about 90-60% by weight of at least one alkoxyated alky pheno water-soluble nonionic surfactant and

washing the fabric to be cleaned with the detergent composition in a laundering process wherein the fabric is immersed in water, the water having a pH of about between 6.5-10 and a temperature of about 28.degree. C. to about 75.degree. C., and the fabric is agitated for a period of time to remove the hydrocarbon-containing greases and oils.

6. The method of claim 1 wherein the polyalkoxylated amine consists of from about 30-40% by weight of the composition and the nonionic surfactant consists of from about 70-60% by weight of the composition.

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L31: Entry 48 of 75

File: USPT

Mar 16, 1999

DOCUMENT-IDENTIFIER: US 5883065 A

TITLE: Phase separated detergent composition

Brief Summary Text (23):

In another embodiment of the invention, an emulsified detergent composition which comprises from about 0.1% to about 70% by weight of a detergent surfactant selected from the group consisting of polyhydroxy fatty acid amides, alcohol ethoxylates, alkyl phenol ethoxylates and mixtures thereof is provided. Additionally, the emulsified detergent composition comprises from about 1% to about 5% by weight of a water-soluble ethoxylated amine selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines and mixtures thereof. The emulsified detergent composition also contains from about 0.01% to about 5% of polyethylene glycol, from about 0.05% to about 10% of an electrolyte and water. The cloud point of the detergent composition is preferably less than about 20.degree. C. The detergent surfactant and the water are in two phases in a weight ratio of from about 1:10 to about 10:1 in the detergent composition.

Brief Summary Text (48):

The compositions of the present invention can also optionally contain water-soluble ethoxylated amines having clay soil removal and antiredeposition properties. The emulsified detergent composition disclosed herein may contain from about 1% to about 5%, by weight, of a water-soluble ethoxylated amine selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, and mixtures thereof. The most preferred soil release and antiredeposition agent is ethoxylated tetraethylenepentamine. A highly preferred emulsified detergent composition embodiment of the instant invention would contain from about 0.005% to about 4% by weight of an ethoxylated tetraethylenepentamine.

Brief Summary Text (49):

Exemplary ethoxylated amines are further described in U.S. Pat. No. 4,597,898, Vander Meer, issued Jul. 1, 1986. Another group of preferred clay soil removal-antiredeposition agents are the cationic compounds disclosed in European Patent Application 111,965, Oh and Gosselink, published Jun. 27, 1984. Other clay soil removal/antiredeposition agents which can be used include the ethoxylated amine polymers disclosed in European Patent Application 111,984, Gosselink, published Jun. 27, 1984; the zwitterionic polymers disclosed in European Patent Application 112,592, Gosselink, published Jul. 4, 1984; and the amine oxides disclosed in U.S. Pat. No. 4,548,744, Connor, issued Oct. 22, 1985. Other clay soil removal and/or antiredeposition agents known in the art can also be utilized in the compositions herein. Another type of preferred antiredeposition agent includes the carboxymethyl cellulose materials. These materials are well known in the art.

Current US Class (1):

510

CLAIMS:

2. An emulsified detergent composition according to claim 1 further comprising from about 1% to about 5%, by weight of said composition, of a water-soluble ethoxylated amine selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines and mixtures thereof.

10. An emulsified detergent composition, comprising:

(a) from about 0.1% to about 70% by weight of a deterative surfactant selected from the group consisting of polyhydroxy fatty acid amides, alcohol ethoxylates, alkyl phenol ethoxylates and mixtures thereof;

(b) from about 1% to about 5% by weight of a water-soluble ethoxylated amine selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines and mixtures thereof;

(c) from about 0.01% to about 5% of polyethylene glycol;

(d) from about 0.05% to about 10% of an electrolyte; and

(e) the balance water;

whereby the cloud point of the detergent composition is from about -10.degree. C. to about 20.degree. C., and the deterative surfactant and the water are in two phases in a weight ratio of about 1:10 to about 10:1 in the detergent composition.

14. An emulsified detergent composition, comprising:

(a) from about 25% to about 35% by weight of a C.sub.10-12 ethoxylated fatty alcohol having at least about 4 ethylene oxide units per mole;

(b) from about 0.005% to about 4% by weight of an ethoxylated amine selected from the group consisting of ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines and mixtures thereof;

(c) from about 0.01% to about 2% by weight of polyethylene glycol;

(d) from about 0.1% to about 0.5% by weight of protease enzyme;

(e) from about 5% to about 25% of hydrocarbon;

(f) from about 0.1% to about 5% of an electrolyte; and

(g) the balance water;

whereby the cloud point of the detergent composition is from about -10.degree. C. to about 20.degree. C. and the deterative surfactant and the water are in two separate phases in a weight ratio of about 1:7 to about 2:1 in the detergent composition.

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L31: Entry 55 of 75

File: USPT

Jan 30, 1996

DOCUMENT-IDENTIFIER: US 5487838 A

TITLE: Reaction products of a boron compound and a phospholipid, and lubricant and aqueous fluids containing same

Detailed Description Text (198):

The alkoxylated amines useful as surfactants Alkoxylated amines include polyalkoxylated amines and are available from Akzona Incorporated under the names ETHODUOMEEN.RTM. polyethoxylated diamines; ETHOMEEN.RTM., polyethoxylated aliphatic amines; ETHOMID.RTM., polyethoxylated amides; and ETHOQUAD, polyethoxylated quaternary ammonium chlorides.

Detailed Description Text (207):

Preferred thickeners, particularly when the compositions of the invention are required to be stable under high shear applications, are the water-dispersible reaction products formed by reacting at least one hydrocarbyl-substituted succinic acid and/or anhydride wherein the hydrocarbyl group has from about 8 to about 40 carbon atoms preferably has from about 8 to about 30, more preferably from about 12 to about 24, still more preferably from about 16 to about 18, with at least one water-dispersible amine terminated poly(oxyalkylene) or at least one water-dispersible hydroxy-terminated polyoxyalkylene.

Detailed Description Text (208):

Examples of water-dispersible amine-terminated poly(oxyalkylene)s that are useful in accordance with the present invention are disclosed in U.S. Pat. Nos. 3,021,232; 3,108,011; 4,444,566; and Re 31,522. The disclosures of these patents are incorporated herein by reference. Water-dispersible amine terminated poly(oxyalkylene)s that are useful are commercially available from the Texaco Chemical Company under the trade name Jeffamine.RTM..

Detailed Description Text (210):

The reaction between the succinic acid and/or anhydride and the amine- or hydroxy-terminated polyoxyalkylene can be carried out at a temperature in the range of about 60.degree. C. to about 160.degree. C., preferably about 120.degree. C. to about 160.degree. C. The ratio of equivalents of carboxylic agent to polyoxyalkylene preferably ranges from about 0.1:1 to about 8:1, preferably about 1:1 to about 4:1, and advantageously about 2:1. The reaction products may be used as salts or may form salts when added to concentrates and fluids containing metals or amines.

Detailed Description Text (212):

When the thickener is formed using an amine-terminated poly(oxyalkylene), the thickening characteristics of said thickener can be enhanced by combining it with at least one surfactant. Any of the surfactants identified above can be used in this regard. When such surfactants are used, the weight ratio of thickener to surfactant is generally in the range of from about 1:5 to about 5:1, preferably from about 1:1 to about 3:1.

Current US Class (1):252

WEST

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L31: Entry 57 of 75

File: USPT

Nov 26, 1991

DOCUMENT-IDENTIFIER: US 5068324 A

TITLE: Novel amphoteric polymers

Brief Summary Text (12):

Class #3: Quaternary compounds of ethoxylated, propoxylated or nonalkoxylated amido amines derived from the reaction of a high molecular weight fatty acid like stearic acid and a polyamine like diethylene triamine. The standard quaternizing agents are di-ethylsulfate or di-methyl sulfate or methyl chloride or benzyl chloride.

Brief Summary Text (32):

The reaction of a primary amine or primary amine alkoxylates with varying amounts of acrylonitrile followed by hydrogenation to produce an amino amine or alkoxy aminoamine is well known to those skilled in the art and are commercially practiced by Tomah Products, Milton, Wis. The overall reaction is shown below: ##STR4##

Brief Summary Text (44):

As stated, another novel aspect of this invention is the use of alkoxylated ether diamines to make the amphoteric monomers useful as raw materials in the practice or a preferred embodiment of this invention. This results in polymeric amphoteric which exhibit an inverse cloud point in aqueous solution. The inverse cloud point phenomena which occurs as one heats an aqueous solution to a critical temperature has been well documented. More detailed descriptions of this are found in standard textbooks, such as A. M. Schwartz and J. W. Perry "Surface Active Agents", Vol. I (1949); and "Surface Active Agents and Detergents" Vol. II (1958). Interscience Publishers, New York, the descriptions of which are incorporated herein by reference. Standard amphoteric do not exhibit this cloud point phenomena. The product exhibiting this property is least soluble in water above the high cloud point, and has the maximum substantivity to metal and fiber. This property together with the liquidity and high molecular weight from the choice of the guerbet ether amine or guerbet ether amine alkoxylate, allows for the formulation of water based high efficiency lubricants for metal, hair and textile applications which can be easily formulated. Additionally, the products of this invention are ideally suited to extreme pressure lubricants where aqueous solutions heat up as a result of two metal parts generating friction. The water solution will heat to above the inverse cloud point, the amphoteric will become less soluble in water and form a film on the metal. Thus the lubricant is delivered to the surface of the metal where it is most needed.

Current US Class (2):510

WEST

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L31: Entry 60 of 75

File: USPT

Jan 2, 1990

DOCUMENT-IDENTIFIER: US 4891160 A

TITLE: Detergent compositions containing ethoxylated amines having clay soil removal/anti-redeposition propertiesAbstract Text (1):

Detergent compositions which comprise from about 0.05 to about 95% by weight of a water-soluble ethoxylated amine having clay soil removal/anti-redeposition properties. These compounds are selected from ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, ethoxylated amine polymers and mixtures thereof. In addition to the ethoxylated amines, the detergent compositions further comprise from about 1 to about 75% by weight of a nonionic, anionic, ampholytic, zwitterionic or cationic detergent surfactant, or mixture thereof. In addition to these detergent surfactants, the detergent composition can optionally comprise from 0 to about 80% by weight of a detergent builder.

Brief Summary Text (2):

The present application relates to ethoxylated amines having clay-soil removal/anti-redeposition properties when used in detergent compositions.

Brief Summary Text (24):

The present invention relates to detergent compositions which comprise from about 0.05 to about 95% by weight of water-soluble ethoxylated amines having clay soil removal/anti-redeposition properties. These compounds are selected from the group consisting of:

Brief Summary Text (28):

(4) ethoxylated amine polymers having the general formula: ##STR8##

Brief Summary Text (30):

In addition to the ethoxylated amines, the detergent compositions further comprise from about 1 to about 75% by weight of a nonionic, anionic, ampholytic, zwitterionic or cationic detergent surfactant or mixture thereof. In addition to these detergent surfactants, the detergent composition can optionally comprise from 0 to about 80% by weight of a detergent builder.

Brief Summary Text (31):

The ethoxylated amines of the present invention provide clay soil removal benefits while being anionic detergent surfactant compatible. At most wash pH's, it is believed that the nitrogen atoms of these compounds are partially protonated. The resulting positively charged centers (and remaining polar nitrogen atoms) are believed to aid in the adsorption of the compound onto the negatively charged layers of the clay particle. It is also believed that the hydrophilic ethoxy units of the compound swell the clay particle so that it loses its cohesive character and is swept away in the wash water.

Brief Summary Text (32):

The anti-redeposition benefits provided by these ethoxylated amines are also believed to be due to the formation of positively charged centers which, together with the remaining polar nitrogens, aid in its adsorption onto soil suspended in the wash water. As more and more of these compounds adsorb onto the suspended soil, it becomes encased within a hydrophilic layer provided by the attached ethoxy units. As such, the hydrophilically encased soil is prevented from redepositing on fabrics, in

particular hydrophobic fabrics such as polyester, during the laundering cycle.

Brief Summary Text (33):

Ethoxylated Amines

Brief Summary Text (34):

The water-soluble ethoxylated amines useful in detergent compositions of the present invention are selected from ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, ethoxylated amine polymers, and mixtures thereof as previously defined.

Brief Summary Text (35):

In the preceding formulas, R.sup.1 can be branched ##STR10## hydroxyalkylene, alkenylene, alkarylene or oxyalkylene. R.sup.1 is preferably C.sub.2 -C.sub.6 alkylene for the ethoxylated diamines and amine polymer. For the ethoxylated diamines, the minimum degree of ethoxylation required for suitable clay soil removal/anti-redeposition properties decreases on going from C.sub.2 -C.sub.3 alkylene (ethylene, propylene) to hexamethylene. However, for the ethoxylated amine polymers, in particular the ethoxylated polyalkyleneamines and polyalkyleneimines, especially at higher molecular weights, C.sub.2 -C.sub.3 alkynes (ethylene, propylene) are preferred for R.sup.1 with ethylene being most preferred. Each R.sup.2 is preferably the moiety --L--X.

Brief Summary Text (36):

In the preceding formulas, hydrophilic chain L usually consists entirely of the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 O).sub.n]-- . The moieties --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- of the polyoxyalkylene moiety can be mixed together or preferably form blocks of --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- moieties. R.sup.5 is preferably C.sub.3 H.sub.6 (propylene). For the ethoxylated polyamines and amine polymers, m is preferably from 0 to about 5. For all ethoxylated amines of the present invention, m is most preferably 0, i.e. the polyoxyalkylene moiety consists entirely of the moiety --(CH.sub.2 CH.sub.2 O).sub.n -- . The moiety --(CH.sub.2 CH.sub.2 O).sub.n -- preferably comprises at least about 85% by weight of the polyoxyalkylene moiety and most preferably 100% by weight (m is 0).

Brief Summary Text (37):

In the preceding formula, X can be any compatible nonionic group, anionic group or mixture thereof. Suitable nonionic groups include C.sub.1 -C.sub.4 or hydroxyalkyl ester or ether groups, preferably the acetate ester or methyl ether, respectively; hydrogen (H); or mixtures thereof. The particularly preferred nonionic group is H. With regard to anionic groups, PO.sub.3.sup.-2 and SO.sub.3.sup.- are suitable. The particularly preferred anionic group is SO.sub.3. It has been found that the percentage of anionic groups relative to nonionic groups can be important to the clay soil removal/anti-redeposition properties provided by the ethoxylated amine. A mixture of from 0 to about 30% anionic groups and from about 70 to 100% nonionic groups provides preferred properties. A mixture of from about 5 to about 10% anionic groups and from about 90 to about 95% nonionic groups provides the most preferred properties. Usually, a mixture of from 0 to about 80% anionic groups and from about 20 to 100% nonionic groups provides suitable clay soil removal/anti-redeposition properties.

Brief Summary Text (41):

Preferred ethoxylated amine polymers are the ethoxylated C.sub.2 -C.sub.3 polyalkyleneamines and polyalkyleneimines. Particularly preferred ethoxylated polyalkyleneamines and polyalkyleneimines are the ethoxylated polyethyleneamines (PEAs) and polyethyleneimines (PEIs). These preferred compounds comprise units having the general formula: ##STR15## wherein X, w, x, y, z and n are defined as before.

Brief Summary Text (46):

The level at which the ethoxylated amine(s) can be present in the detergent compositions of the present invention can vary depending upon the compounds used, the particular detergent formulation (liquid, granular) and the benefits desired. These compositions can be used as laundry detergents, laundry additives, and laundry

pretreatments. Generally, the ethoxylated amines can be included in an amount of from about 0.05 to about 95% by weight of the composition, with the usual range being from about 0.1 to about 10% by weight for laundry detergents. In terms of the benefits achieved, preferred detergent compositions can comprise from about 0.5 to about 5% by weight of the ethoxylated compounds of the present invention. Typically, these preferred compositions comprise from about 1 to about 3% by weight of these compounds. These compounds are normally present at a level that provides from about 2 ppm to about 200 ppm, preferably from about 10 ppm to about 100 ppm, of the compound in the wash solution at recommended U.S. usage levels, and normally from about 30 ppm to about 1000 ppm, preferably from about 50 ppm to about 500 ppm for European usage levels.

Brief Summary Text (47):

Methods for Making Ethoxylated Amines

Brief Summary Text (48):

The ethoxylated compounds of the present invention can be prepared by standard methods for ethoxylating amines. For the diamines, polyamines, and amine polymers such as the polyalkyleneamines and polyalkyleneimines, there is preferably an initial step of condensing sufficient ethylene oxide to provide 2-hydroxyethyl groups at each reactive site (hydroxyethylation). This initial step can be omitted by starting with a 2-hydroxyethyl amine such as triethanolamine (TEA). The appropriate amount of ethylene oxide is then condensed with these 2-hydroxyethylamines using an alkali metal (e.g., sodium, potassium) hydride or hydroxide as the catalyst to provide the respective ethoxylated amines. The total degree of ethoxylation per reactive site (n) can be determined according to the following formula:

Detailed Description Text (1):

Representative syntheses of ethoxylated amines of the present invention are as follows:

Detailed Description Text (9):

By a procedure similar to that of Example 1, dried triethanolamine (M.W. 149, 89.4 g. 0.6 moles) was catalyzed with 6.32 g. (0.0451 moles) of freshly prepared 40% potassium hydroxide solution under argon. Water was removed by stirring at 110.degree.-120.degree. C. under an aspirator vacuum for 0.5 hrs., then under vacuum pump for 0.5 hrs. EO was then added under atmospheric pressure with stirring at 118.degree.-130.degree. C. After 5.6 hrs., a total of 917 g. (20.84 moles) of EO had been added to give a calculated total degree of ethoxylation of 12.58. The ethoxylated amine obtained was a dark amber mobile liquid.

Detailed Description Text (89):

Clay Soil Removal/Anti-Redeposition Properties of Various Ethoxylated Amines

Detailed Description Text (95):

A second wash used the same detergent composition but also containing an ethoxylated amine at 20 ppm. Neither composition contained optical brighteners. The product washes approximated a conventional home use laundry situation. After laundering, the swatches were dried in a mini-dryer.

Detailed Description Text (97):

The improvement in clay soil removal performance of the composition containing the ethoxylated amine was measured as the difference in .DELTA.W values (.DELTA..sup.2 W) relative to the control composition.

Detailed Description Text (100):

After the AMW pots were filled with 6 liters of water each, the detergent composition to be tested (control or containing 20 ppm ethoxylated amine as in clay soil removal test) was added and agitated for 2 minutes. A background soil mixture (200 ppm artificial body soil, 100 ppm vacuum cleaner soil and 200 ppm clay soil) was then added and agitated for an additional 3 minutes. Three 5 inch square test swatches (50% polyester/50% cotton T-shirt material) were then added, along with two 80% cotton/20% polyester terry clothes and two 11 inch square swatches of 100% polyester knit fabric. The 10 minute wash cycle commenced at this point.

Detailed Description Text (101):

Following the rinse cycle, the test swatches were dried in a mini-dryer. Gardner Whiteness meter readings (L, a and b) were then determined for the three test swatches. Anti-redeposition performance (ARD) was then calculated according to the following equation: ##EQU2## The ARD values for the three test swatches were then averaged. The improvement in anti-redeposition performance of the composition containing the ethoxylated amine was measured as the difference in ARD values (.DELTA.ARD) relative to the control composition.

Detailed Description Text (103):

The results from testing the clay-soil removal and anti-redeposition performance of various ethoxylated amines is shown in the following Table:

Current US Class (1):

510

CLAIMS:

1. A laundry detergent composition, which comprises:

(a) from about 1 to about 75% by weight of a detergent surfactant selected from the group consisting of nonionic, anionic, ampholytic, zwitterionic or cationic detergent surfactants and mixtures thereof;

(b) from about 0.05 to about 95% by weight of a water-soluble ethoxylated amine having clay soil removal/anti-redeposition properties selected from the group consisting of

(1) ethoxylated monoamines having the formula:

(X--L--)--N--(R.sup.2).sub.2

(2) ethoxylated diamines having the formula: ##STR22## (3) ethoxylated polyamines having the formula: ##STR23## (4) ethoxylated amine polymers having the general formula: ##STR24## and (5) mixtures thereof; wherein A.sup.1 is ##STR25## R is H or C.sub.1 -C.sub.4 alkyl or hydroxyalkyl; R.sup.1 is C.sub.2 -C.sub.12 alkylene, hydroxyalkylene, alkenylene, arylene or alkarylene, or a C.sub.2 -C.sub.3 oxyalkylene moiety having from 2 to about 20 oxyalkylene units provided that no O--N bonds are formed; each R.sup.2 is C.sub.1 -C.sub.4 alkyl or hydroxyalkyl, the moiety --L--X, or two R.sup.2 together form the moiety --(CH.sub.2).sub.r --A.sup.2 --(CH.sub.2).sub.s --, wherein A.sup.2 is --O-- or --CH.sub.2 --, r is 1 or 2, s is 1 or 2, and r+s is 3 or 4; X is a nonionic group selected from the group consisting of H, C.sub.1 -C.sub.4 alkyl or hydroxyalkyl ester or ether groups and mixtures thereof, an anionic group selected from the group consisting of SO.sub.3.sup.- and PO.sub.3.sup.-, or mixtures thereof; R.sup.3 is a substituted C.sub.3 -C.sub.12 alkyl, hydroxyalkyl, alkenyl, aryl, or alkaryl group having p substitution sites; R.sup.4 is C.sub.1 -C.sub.12 alkylene, hydroxyalkylene, alkenylene, arylene or alkarylene, or a C.sub.2 -C.sub.3 oxyalkylene moiety having from 2 to about 20 oxyalkylene units provided that no O--O or O--N bonds are formed; L is a hydrophilic chain which contains the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 O).sub.n]--, wherein R.sup.5 is C.sub.3 -C.sub.4 alkylene or hydroxyalkylene and m and n are numbers such that the moiety --(CH.sub.2 CH.sub.2 O).sub.n -- comprises at least about 50% by weight of said polyoxyalkylene moiety; for said monoamines, m is from 0 to about 4, and n is at least about 12 for said diamines, m is from 0 to about 3, and n is at least about 6 when R.sup.1 is C.sub.2 -C.sub.3 alkylene, hydroxyalkylene, or alkenylene, and at least about 3 when R.sup.1 is other than C.sub.2 -C.sub.3 alkylene, hydroxyalkylene or alkenylene; for said polyamines and amine polymers, m is from 0 to about 10 and n is at least about 3; p is from 3 to 8; q is 1 or 0; t is 1 or 0, provided that t is 1 when q is 1; w is 1 or 0; x+y+z is at least 2; and y+z is at least 2; provided that when w and x are 0, said amine polymers are cyclic; and

(c) an optical brightener.

5. A composition according to claim 4 wherein said ethoxylated amine is an ethoxylated monoamine.

9. A composition according to claim 3 wherein said ethoxylated amine is an ethoxylated diamine.

13. A composition according to claim 4 wherein said ethoxylated amine is an ethoxylated amine polymer and R.^{sup.1} is C._{sub.2} -C._{sub.3} alkylene.

16. A composition according to claim 15 wherein said ethoxylated amine polymer is an ethoxylated polyethyleneamine having a molecular weight of from about 140 to about 310 prior to ethoxylation.

17. A composition according to claim 15 wherein said ethoxylated amine polymer is an ethoxylated polyethyleneimine having a molecular weight of from about 600 to about 1800 prior to ethoxylation.

22. A composition according to claim 4 wherein said ethoxylated amine comprises from about 0.1 to about 10% by weight of the composition.

25. A composition according to claim 24 wherein said ethoxylated amine is an ethoxylated polyethyleneamine having a molecular weight of from about 140 to about 310 prior to ethoxylation, L consists entirely of the moiety --(CH._{sub.2} CH._{sub.2} O)._{sub.n} --, and n is at least about 12.

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L31: Entry 61 of 75

File: USPT

Sep 19, 1989

DOCUMENT-IDENTIFIER: US 4867895 A

**** See image for Certificate of Correction ****

TITLE: Timed-release bleach coated with an amine with reduced dye damage

Brief Summary Text (25):

Additional nonionic surfactants include certain block copolymers of propylene oxide and ethylene oxide, block polymers propylene oxide and ethylene oxide with propoxylated ethylene diamine, and semi-polar nonoxides, phosphine oxides, sulfoxides, and their ethoxylated derivatives.

Brief Summary Text (29):

The amine should include a saturated hydrocarbon chain having at least about five (5) carbon atoms. Preferred amine compounds for practice of the present invention are primary amines having the formula $RNH_{sub.2}$, where R is a hydrocarbon substituent having between about six (6) and about twenty-four (24) carbon atoms, and includes branched chains, aryl groups, and alkoxy groups. Secondary amines having the desired solubility profile may also be used. Particularly preferred amines are surface active, which assists in detergency removal during use. Examples of particularly preferred amines for practice of the present invention include dodecylamine ($C_{sub.12}H_{sub.25}NH_{sub.2}$), stearyl amine, oleylamine ($C_{sub.18}H_{sub.35}NH_{sub.2}$), and long chain ethoxylated amines. One such long chain ethoxylated amine has the structure illustrated by Formula I. ##STR2## where R is a mixture of alkyl groups from about 10 to 12 carbons, and x is an average of 1. The Formula I amine is available from Texaco Chemical Company under the mark "Jeffamine" M-300. Other amines in the Jeffamine M series are also suitable (e.g. M-360, M-600, M-1000), as are the poly(oxyethylene) diamines of the ED series. Illustrative suitable amines also are cocoamine, hexadecylamine ($C_{sub.16}H_{sub.33}NH_{sub.2}$), octadecylamine ($C_{sub.18}H_{sub.37}NH_{sub.2}$), and the diamines thereof. An exemplary diamine is dicocoamine. Tertiary amines are possible for use, but less preferred.

Detailed Description Text (14):

A composition in accordance with the invention was prepared in a manner analogous to that described by Example II, where the inventive particles were 72 wt. % 1,bromo-3,chloro-5,5 methylhydantoin, 18 wt. % $Na_{sub.2}SO_{sub.4}$, and 10 wt. % Jeffamine M-300 long chain ethoxylated amine. A comparison composition was obtained from FMC Corporation containing NaDCC (sodium dichloroisocyanurate) instead of hydantoin as hypohalite source, and instead of the fatty amine of the invention sulfamic acid was used in the outer coating. The comparison particles were 13.5 wt. % NaDCC, 6.8 wt. % sulfamic acid, 57.9 wt. % $Na_{sub.2}C_{sub.3}$ and 21.8% sodium silicate. A control composition, consisting of the uncoated hyantoin, was also utilized.

Current US Class (1):252Current US Class (3):510

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L31: Entry 63 of 75

File: USPT

Mar 1, 1988

DOCUMENT-IDENTIFIER: US 4728453 A

**** See image for Certificate of Correction ****

TITLE: Timed-release bleach coated with an inorganic salt and an amine with reduced dye damage

Brief Summary Text (25):

Additional nonionic surfactants include certain block copolymers of propylene oxide and ethylene oxide, block polymers propylene oxide and ethylene oxide with propoxylated ethylene diamine, and semi-polar non-oxides oxides, phosphine oxides, sulfoxides, and their ethoxylated derivatives.

Brief Summary Text (29):

The amine should include a saturated hydrocarbon chain having at least about five (5) carbon atoms. Preferred amine compounds for practice of the present invention are primary amines having the formula $RNH_{sub.2}$, where R is a hydrocarbon substituent having between about six (6) and about twenty-four (24) carbon atoms, and includes branched chains, aryl groups, and alkoxy groups. Secondary amines having the desired solubility profile may also be used. Particularly preferred amines are surface active, which assists in detergency removal during use. Examples of particularly preferred amines for practice of the present invention include dodecylamine ($C_{sub.12}H_{sub.25}NH_{sub.2}$), stearyl amine, oleylamine ($C_{sub.18}H_{sub.35}NH_{sub.2}$), and long chain ethoxylated amines. One such long chain ethoxylated amine has the structure illustrated by Formula I. ##STR2## where R is a mixture of alkyl groups from about 10 to 12 carbons, and x is an average of 1. The Formula I amine is available from Texaco Chemical Company under the mark "Jeffamine" M-300. Other amines in the Jeffamine M series are also suitable (e.g. M-360, M-600, M-1000), as are the poly(oxyethylene) diamines of the ED series. Illustrative suitable amines also are cocoamine, hexadecylamine ($C_{sub.16}H_{sub.33}NH_{sub.2}$), octadecylamine ($C_{sub.18}H_{sub.37}NH_{sub.2}$), and the diamines thereof. An exemplary diamine is dicocoamine. Tertiary amines are possible for use, but less preferred.

Detailed Description Text (14):

A composition in accordance with the invention was prepared in a manner analogous to that described by Example II, where the inventive particles were 72 wt. % 1,bromo-3,chloro-5,5 methylhydantoin, 18 wt. % $Na_{sub.2}SO_{sub.4}$, and 10 wt. % Jeffamine M-300 long chain ethoxylated amine. A comparison composition was obtained from FMC Corporation containing NaDCC (sodium dichloroisocyanurate) instead of hydantoin as hypohalite source, and instead of the fatty amine of the invention sulfamic acid was used in the outer coating. The comparison particles were 13.5 wt. % NaDCC, 6.8 wt. % sulfamic acid, 57.9 wt. % $Na_{sub.2}CO_{sub.3}$ and 21.8% sodium silicate. A control composition, consisting of the uncoated hydantoin, was also utilized.

Current US Class (1):

252

CLAIMS:

10. The bleach encapsulates as in claim 9 wherein the fatty amine includes dodecylamine, stearylamine, oleylamine, cocoamine, hexadecylamine, octadecylamine, the diamines thereof, or a long chain ethoxylated amine.



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L31: Entry 64 of 75

File: USPT

Jul 1, 1986

DOCUMENT-IDENTIFIER: US 4597898 A

TITLE: Detergent compositions containing ethoxylated amines having clay soil removal/anti-redeposition propertiesAbstract Text (1):

Detergent compositions which comprise from about 0.05 to about 95% by weight of a water-soluble ethoxylated amine having clay soil removal/anti-redeposition properties. These compounds are selected from ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, ethoxylated amine polymers and mixtures thereof. In addition to the ethoxylated amines, the detergent compositions further comprise from about 1 to about 75% by weight of a nonionic, anionic, ampholytic, zwitterionic or cationic detergent surfactant, or mixture thereof. In addition to these detergent surfactants, the detergent composition can optionally comprise from 0 to about 80% by weight of a detergent builder.

Brief Summary Text (2):

The present application relates to ethoxylated amines having clay-soil removal/anti-redeposition properties when used in detergent compositions.

Brief Summary Text (24):

The present invention relates to detergent compositions which comprise from about 0.05 to about 95% by weight of water-soluble ethoxylated amines having clay soil removal/anti-redeposition properties. These compounds are selected from the group consisting of:

Brief Summary Text (28):

(4) ethoxylated amine polymers having the general formula: ##STR8## and

Brief Summary Text (30):

In addition to the ethoxylated amines, the detergent compositions further comprise from about 1 to about 75% by weight of a nonionic, anionic, ampholytic, zwitterionic or cationic detergent surfactant or mixture thereof. In addition to these detergent surfactants, the detergent composition can optionally comprise from 0 to about 80% by weight of a detergent builder.

Brief Summary Text (31):

The ethoxylated amines of the present invention provide clay soil removal benefits while being anionic detergent surfactant compatible. At most wash pH's, it is believed that the nitrogen atoms of these compounds are partially protonated. The resulting positively charged centers (and remaining polar nitrogen atoms) are believed to aid in the adsorption of the compound onto the negatively charged layers of the clay particle. It is also believed that the hydrophilic ethoxy units of the compound swell the clay particle so that it loses its cohesive character and is swept away in the wash water.

Brief Summary Text (32):

The anti-redeposition benefits provided by these ethoxylated amines are also believed to be due to the formation of positively charged centers which, together with the remaining polar nitrogens, aid in its adsorption onto soil suspended in the wash water. As more and more of these compounds adsorb onto the suspended soil, it becomes encased within a hydrophilic layer provided by the attached ethoxy units. As such, the hydrophilically encased soil is prevented from redepositing on fabrics, in

particular hydrophobic fabrics such as polyester, during the laundering cycle.

Brief Summary Text (33):

ETHOXYLATED AMINES

Brief Summary Text (34):

The water-soluble ethoxylated amines useful in detergent compositions of the present invention are selected from ethoxylated monoamines, ethoxylated diamines, ethoxylated polyamines, ethoxylated amine polymers, and mixtures thereof as previously defined.

Brief Summary Text (35):

In the preceding formulas, R.sup.1 can be branched ##STR10## or most preferably linear (e.g. --CH.sub.2 CH.sub.2 --, --CH.sub.2 --CH.sub.2 --CH.sub.2 --, ##STR11## alkylene, hydroxyalkylene, alkenylene, alkarylene or oxyalkylene. R.sup.1 is preferably C.sub.2 -C.sub.6 alkylene for the ethoxylated diamines and amine polymers. For the ethoxylated diamines, the minimum degree of ethoxylation required for suitable clay soil removal/anti-redeposition properties decreases on going from C.sub.2 -C.sub.3 alkylene (ethylene, propylene) to hexamethylene. However, for the ethoxylated amine polymers, in particular the ethoxylated polyalkyleneamines and polyalkyleneimines, especially at higher molecular weights, C.sub.2 -C.sub.3 alkynes (ethylene, propylene) are preferred for R.sup.1 with ethylene being most preferred. Each R.sup.2 is preferably the moiety --L--X.

Brief Summary Text (36):

In the preceding formulas, hydrophilic chain L usually consists entirely of the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 O).sub.n]-- . The moieties --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- of the polyoxyalkylene moiety can be mixed together or preferably form blocks of --(R.sup.5 O).sub.m -- and --(CH.sub.2 CH.sub.2 O).sub.n -- moieties. R.sup.5 is preferably C.sub.3 H.sub.6 (propylene). For the ethoxylated polyamines and amine polymers, m is preferably from 0 to about 5. For all ethoxylated amines of the present invention, m is most preferably 0, i.e. the polyoxyalkylene moiety consists entirely of the moiety --(CH.sub.2 CH.sub.2 O).sub.n -- . The moiety --(CH.sub.2 CH.sub.2 O).sub.n -- preferably comprises at least about 85% by weight of the polyoxyalkylene moiety and most preferably 100% by weight (m is 0).

Brief Summary Text (37):

In the preceding formula, X can be any compatible nonionic group, anionic group or mixture thereof. Suitable nonionic groups include C.sub.1 -C.sub.4 alkyl or hydroxyalkyl ester or ether groups, preferably the acetate ester or methyl ether, respectively; hydrogen (H); or mixtures thereof. The particularly preferred nonionic group is H. With regard to anionic groups, PO.sub.3.sup.-2 and SO.sub.3.sup.- are suitable. The particularly preferred anionic group is SO.sub.3.sup.-. It has been found that the percentage of anionic groups relative to nonionic groups can be important to the clay soil removal/anti-redeposition properties provided by the ethoxylated amine. A mixture of from 0 to about 30% anionic groups and from about 70 to 100% nonionic groups provides preferred properties. A mixture of from about 5 to about 10% anionic groups and from about 90 to about 95% nonionic groups provides the most preferred properties. Usually, a mixture of from 0 to about 80% anionic groups and from about 20 to 100% nonionic groups provides suitable clay soil removal/anti-redeposition properties.

Brief Summary Text (41):

Preferred ethoxylated amine polymers are the ethoxylated C.sub.2 -C.sub.3 polyalkyleneamines and polyalkyleneimines. Particularly preferred ethoxylated polyalkyleneamines and polyalkyleneimines are the ethoxylated polyethyleneamines (PEAs) and polyethyleneimines (PEIs). These preferred compounds comprise units having the general formula: ##STR16## wherein X, w, x, y, z and n are defined as before.

Brief Summary Text (46):

The level at which the ethoxylated amine(s) can be present in the detergent compositions of the present invention can vary depending upon the compounds used, the particular detergent formulation (liquid, granular) and the benefits desired.

These compositions can be used as laundry detergents, laundry additives, and laundry pretreatments. Generally, the ethoxylated amines can be included in an amount of from about 0.05 to about 95% by weight of the composition, with the usual range being from about 0.1 to about 10% by weight for laundry detergents. In terms of the benefits achieved, preferred detergent compositions can comprise from about 0.5 to about 5% by weight of the ethoxylated compounds of the present invention. Typically, these preferred compositions comprise from about 1 to about 3% by weight of these compounds. These compounds are normally present at a level that provides from about 2 ppm to about 200 ppm, preferably from about 10 ppm to about 100 ppm, of the compound in the wash solution at recommended U.S. usage levels, and normally from about 30 ppm to about 1000 ppm, preferably from about 50 ppm to about 500 ppm for European usage levels.

Brief Summary Text (47):

METHODS FOR MAKING ETHOXYLATED AMINES

Brief Summary Text (48):

The ethoxylated compounds of the present invention can be prepared by standard methods for ethoxylating amines. For the diamines, polyamines, and amine polymers such as the polyalkyleneamines and polyalkyleneimines, there is preferably an initial step of condensing sufficient ethylene oxide to provide 2-hydroxyethyl groups at each reactive site (hydroxyethylation). This initial step can be omitted by starting with a 2-hydroxyethyl amine such as triethanolamine (TEA). The appropriate amount of ethylene oxide is then condensed with these 2-hydroxyethylamines using an alkali metal (e.g., sodium, potassium) hydride or hydroxide as the catalyst to provide the respective ethoxylated amines. The total degree of ethoxylation per reactive site (n) can be determined according to the following formula:

Brief Summary Text (50):

Representative syntheses of ethoxylated amines of the present invention are as follows:

Detailed Description Text (8):

By a procedure similar to that of Example 1, dried triethanolamine (M.W. 149, 89.4 g. 0.6 moles) was catalyzed with 6.32 g. (0.0451 moles) of freshly prepared 40% potassium hydroxide solution under argon. Water was removed by stirring at 110.degree.-120.degree. C. under an aspirator vacuum for 0.5 hrs., then under vacuum pump for 0.5 hours. EO was then added under atmospheric pressure with stirring at 118.degree.-130.degree. C. After 5.6 hrs., a total of 917 g. (20.84 moles) of EO had been added to give a calculated total degree of ethoxylation of 12.58. The ethoxylated amine obtained was a dark amber mobile liquid.

Detailed Description Text (88):

CLAY SOIL REMOVAL/ANTI-REDEPOSITION PROPERTIES OF VARIOUS ETHOXYLATED AMINES

Detailed Description Text (94):

A second wash used the same detergent composition but also containing an ethoxylated amine at 20 ppm. Neither composition contained optical brighteners. The product washes approximated a conventional home use laundry situation. After laundering, the swatches were dried in a mini-dryer.

Detailed Description Text (96):

The improvement in clay soil removal performance of the composition containing the ethoxylated amine was measured as the difference in .DELTA.W values (.DELTA..sup.2 W) relative to the control composition.

Detailed Description Text (99):

After the AMW pots were filled with 6 liters of water each, the detergent composition to be tested (control or containing 20 ppm ethoxylated amine as in clay soil removal test) was added and agitated for 2 minutes. A background soil mixture (200 ppm artificial body soil, 100 ppm vacuum cleaner soil and 200 ppm clay soil) was then added and agitated for an additional 3 minutes. Three 5 inch square test swatches (50% polyester/50% cotton T-shirt material) were then added, along with two 80% cotton/20% polyester terry clothes and two 11 inch square swatches of 100%

polyester knit fabric. The 10 minute wash cycle commenced at this point.

Detailed Description Text (100):

Following the rinse cycle, the test swatches were dried in a mini-dryer. Gardner Whiteness meter readings (L, a and b) were then determined for the three test swatches. Anti-redeposition performance (ARD) was then calculated according to the following equation: ##EQU2## The ARD values for the three test swatches were then averaged. The improvement in anti-redeposition performance of the composition containing the ethoxylated amine was measured as the difference in ARD values (.DELTA.ARD) relative to the control composition.

Detailed Description Text (102):

The results from testing the clay-soil removal and anti-redeposition performance of various ethoxylated amines is shown in the following Table:

Current US Class (1):

510

CLAIMS:

1. A liquid laundry detergent composition, which comprises:

(a) from about 1 to about 75% by weight of a detergent surfactant selected from the group consisting of nonionic, anionic, ampholytic, zwitterionic and cationic detergent surfactants and mixtures thereof;

(b) from about 0.05 to about 95% by weight of a water-soluble ethoxylated amine having clay soil removal/anti-redeposition properties selected from the group consisting of:

(1) ethoxylated monoamines having the formula:

(X--L--)--N--(R.sup.2).sub.2

(2) ethoxylated diamines having the formula: ##STR23## (3) ethoxylated polyamines having the formula: ##STR24## (4) ethoxylated amine polymers having the general formula: ##STR25## and (5) mixtures thereof; wherein A.sup.1 is ##STR26## or --O--; R is H or C.sub.1 -C.sub.4 alkyl or hydroxyalkyl; R.sup.1 is C.sub.2 -C.sub.12 alkylene, hydroxyalkylene, alkenylene, arylene or alkarylene, or a C.sub.2 -C.sub.3 oxyalkylene moiety having from 2 to about 20 oxyalkylene units provided that no O--N bonds are formed; each R.sup.2 is C.sub.1 -C.sub.4 alkyl or hydroxyalkyl, the moiety --L--X, or two R.sup.2 together form the moiety --(CH.sub.2).sub.r --A.sup.2 --(CH.sub.2).sub.s --, wherein A.sup.2 is --O-- or --CH.sub.2 --, r is 1 or 2, s is 1 or 2, and r+s is 3 or 4; X is H; R.sup.3 is a substituted C.sub.3 -C.sub.12 alkyl, hydroxyalkyl, alkenyl, aryl or alkaryl group having p substitution sites; R.sup.4 is C.sub.1 -C.sub.12 alkylene, hydroxyalkylene, alkenylene, arylene or alkarylene, or a C.sub.2 -C.sub.3 oxyalkylene moiety having from 2 to about 20 oxyalkylene units provided that no O--O or O--N bonds are formed; L is a hydrophilic chain which contains the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 O).sub.n]--, wherein R.sup.5 is C.sub.3 -C.sub.4 alkylene or hydroxyalkylene and m and n are numbers such that the moiety --(CH.sub.2 CH.sub.2 O).sub.n -- comprises at least about 50% by weight of said polyoxyalkylene moiety; for said monoamines, m is from about 0 to about 4, and n is at least about 12; for said diamines, m is from 0 to about 3, and n is at least about 6 when R.sup.1 is C.sub.2 -C.sub.3 alkylene, hydroxyalkylene, or alkenylene, and at least about 3 when R.sup.1 is other than C.sub.2 -C.sub.3 alkylene, hydroxyalkylene or alkenylene; for said polyamines and amine polymers, m is from 0 to about 10 and n is at least about 3; p is from 3 to 8; q is 1 or 0; t is 1 or 0, provided that t is 1 when q is 1; w is 1 or 0; x+y+z is at least 2; and y+z is at least 2; provided that when w and x are 0, said amine polymers are cyclic; and

(c) an optical brightener.

5. A composition according to claim 4 wherein said ethoxylated amine is an ethoxylated monoamine.

9. A composition according to claim 3 wherein said ethoxylated amine is an ethoxylated diamine.

13. A composition according to claim 4 wherein said ethoxylated amine is an ethoxylated amine polymer and R.sup.1 is C.sub.2 -C.sub.3 alkylene.

16. A composition according to claim 15 wherein said ethoxylated amine polymer is an ethoxylated polyethyleneamine having a molecular weight of from about 140 to about 310 prior to ethoxylation.

17. A composition according to claim 15 wherein said ethoxylated amine polymer is an ethoxylated polyethyleneimine having a molecular weight of from about 600 to about 1800 prior to ethoxylation.

19. A composition according to claim 4 wherein said ethoxylated amine comprises from about 0.1 to about 10% by weight of the composition.

21. A composition according to claim 19 wherein said ethoxylated amine is an ethoxylated polyethyleneamine having a molecular weight of from about 140 to about 310 prior to ethoxylation, L consists entirely of the moiety --(CH.sub.2 CH.sub.2 O).sub.n --, and n is at least about 12.

29. A liquid laundry detergent composition, which comprises:

(a) from about 5 to about 40% by weight of a fatty acid containing from about 10 to about 22 carbon atoms;

(b) from about 2% to about 60% by weight of an anionic synthetic surfactant;

(c) from about 0.25% to about 12% by weight of a cosurfactant selected from the group consisting of:

(i) quaternary ammonium surfactants having the formula:

[R.sup.2 (OR.sup.3).sub.y] [R.sup.4 (OR.sup.3).sub.y].sub.2 R.sup.5 N.sup.+ X.sup.-

(ii) diquaternary ammonium surfactants having the formula:

[R.sup.2 (OR.sup.3).sub.y] [R.sup.4 (OR.sup.3).sub.y].sub.2 N.sup.+ R.sup.3 N.sup.+ R.sup.5 [R.sup.4 (OR.sup.3).sub.y].sub.2 (X.sup.-).sub.2

(iii) amine surfactants having the formula:

[R.sup.2 (OR.sup.3).sub.y] [R.sup.4 (OR.sup.3).sub.y] R.sup.5 N

(iv) diamine surfactants having the formula:

[R.sup.2 (OR.sup.3).sub.y] [R.sup.4 (OR.sup.3).sub.y] NR.sup.3 NR.sup.5 [R.sup.4 (OR.sup.3).sub.y]

(v) amine oxide surfactants having the formula:

[R.sup.2 (OR.sup.3).sub.y] [R.sup.4 (OR.sup.3).sub.y] R.sup.5 N.fwdarw.O

and

(vi) di(amine oxide) surfactants having the formula: ##STR27## wherein R.sup.2 is an alkyl or alkyl benzyl group having from about 8 to about 18 carbon atoms in the alkyl chain; each R.sup.3 is selected from the group consisting of --CH.sub.2 CH.sub.2 --, --CH.sub.2 CH(CH.sub.3)--, --CH.sub.2 CH(CH.sub.2 OH)--, --CH.sub.2 CH.sub.2 CH.sub.2 --, and mixtures thereof; each R.sup.4 is selected from the group consisting of C.sub.1 -C.sub.4 alkyl, C.sub.1 -C.sub.4 hydroxyalkyl, benzyl, ring structures formed by joining the two R.sup.4 groups, --CH.sub.2 CHOHCHOHCOR.sup.6

CHOHCH.sub.2 OH, wherein R.sup.6 is hexose or hexose polymer having a molecular weight up to about 1000, and hydrogen when y is not 0; R.sup.5 is the same as R.sup.4 or is an alkyl chain wherein the total number of carbon atoms of R.sup.2 plus R.sup.5 is not more than about 18; each y is from 0 to about 10 and the sum of the y values is from 0 to about 15; and X is a compatible anion; the mole ratio of said anionic surfactant to said cosurfactant being at least 1;

(d) from about 0.1 to about 10% by weight of a water-soluble ethoxylated amine having clay soil removal/anti-redeposition properties selected from the group consisting of:

(1) ethoxylated monoamines having the formula:

N--(--L--X.sup.1).sub.3

(2) ethoxylated diamines having the formula: ##STR28## (3) ethoxylated polyamines having the formula:

R.sup.6 --[(A.sup.1).sub.q --(R.sup.7).sub.t --N--(--L--X.sup.1).sub.2].sub.p

(4) ethoxylated amine polymers having the general formula: ##STR29## and (5) mixtures thereof; wherein A.sup.1 is ##STR30## or --O--; R is H or C.sub.1 -C.sub.4 alkyl or hydroxyalkyl; R.sup.1 is C.sub.2 -C.sub.3 alkylene; X.sup.1 is H; R.sup.6 is a substituted C.sub.3 -C.sub.12 alkyl, hydroxyalkyl, alkenyl, aryl, or alkaryl group having p substitution sites; R.sup.7 is C.sub.1 -C.sub.12 alkylene, hydroxylalkylene, alkenylene, arylene or alkarylene, or a C.sub.2 -C.sub.3 oxyalkylene moiety having from 2 to about 20 oxyalkylene units provided that no O--O or O--N bonds are formed; L is a hydrophilic chain which contains the polyoxyalkylene moiety --[(R.sup.5 O).sub.m (CH.sub.2 CH.sub.2 O).sub.n]--, wherein R.sup.5 is C.sub.3 -C.sub.4 alkylene or hydroxyalkylene and m and n are numbers such that the moiety --(CH.sub.2 CH.sub.2 O).sub.n -- comprises at least about 50% by weight of said polyoxyalkylene moiety; for said monoamines, m is from 0 to about 4 and n is at least about 12; for said diamines, m is from 0 to about 3, and n is at least about 6; for said polyamines and amine polymers, m is from 0 to about 10 and n is at least about 3; p is from 3 to 8; q is 1 or 0; t is 1 or 0, provided that t is 1 when q is 1; w is 1 or 0; x+y+z is at least 2; and y+z is at least 2; provided that when w and x are 0, said amine polymers are cyclic; and

(e) an optical brightener;

the composition being formulated to provide an initial pH of from about 6.0 to about 8.5 at a concentration of from about 0.1 to about 2% by weight in water at 20.degree. C.

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L31: Entry 68 of 75

File: USPT

Mar 23, 1982

DOCUMENT-IDENTIFIER: US 4321167 A

TITLE: Heavy duty liquid detergent compositions containing alkoxyated alkylene diamines and fatty acids

Brief Summary Text (14):

The novel liquid detergent compositions according to the present invention consist essentially of, as necessary ingredients, surfactants, suitable totally hydroxyalkylated alkylene diamine, and water. The compositions may also contain various optional ingredients, such as saturated and unsaturated fatty acids, solvents, hydrotroping agents, fabric brighteners, dyes, preservatives, perfumes, pigments, soil anti-redeposition agents, opacifiers, abrasives, suds builders, suds suppressants, etc. The above-indicated optional ingredients are considered as not importantly affecting the ability of compounds formulated in accordance with the present invention, i.e., ones containing suitable surfactants and suitable totally oxyalkylated alkylene diamines, to yield the desired result, i.e., a suitably performing phosphate-free liquid laundry detergent which does not form nitrosamines in detectable amounts.

Brief Summary Text (15):

The organic surfactants which can be used in accordance with the invention include various nonionic, anionic, amphoteric and/or zwitterionic surfactants singly or in combination. These include various alpha-olefin sulfonates, fatty alcohol sulfates, fatty alcohol ether sulfates, n-alkylphenol ethoxylates, dialkylphenol ethoxylates, fatty amine ethoxylates, fatty alcohol alkoxyates, fatty alkanolamides, fatty amine oxides, etc. A useful listing of the various commercially available surfactant compositions is contained in McCutcheon's "Detergents and Emulsifiers", and in principle, the particular detergent compositions contained in the examples presented herein below may be modified by the substitution for the particular surfactants named therein of any of the other surfactants indicated in the above-mentioned work.

Brief Summary Text (18):

The totally oxyalkylated alkylene diamine may be present in an alkalizing amount of approximately 9 to 15 percent by weight of the composition. The use of N,N,N',N'-tetrakis(2-hydroxypropyl)ethylene diamine at a value in the range just indicated is predicated, as those skilled in the art will appreciate, upon the assumption that the remainder of the detergent composition is substantially neutral. The composition will be otherwise substantially neutral if the anionic surfactant (linear alkyl sulfonate) is used in its sodium-neutralized form, rather than in a free-acid form; the possibility exists that the anionic surfactant will be used in its free-acid form, and the N,N,N', N'-tetrakis(2-hydroxypropyl)ethylene diamine will also be used, in suitably greater corresponding amount, to serve not only as alkalizing agent but also as neutralizer for the free acid. Accordingly, it is proper to speak of detergent compositions which contain an alkalizing proportion of oxyalkylated alkylene diamine of 9 to 15 weight percent of such oxyalkylated alkylene diamine, thereby allowing for the possibility that such alkylene diamine may be present in greater quantities, for its alkalizing effect, if an anionic surfactant in the free-acid form is utilized.

Current US Class (1):

510

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L31: Entry 69 of 75

File: USPT

Nov 24, 1981

DOCUMENT-IDENTIFIER: US 4302246 A

**** See image for Certificate of Correction ****

TITLE: Solution and method for selectively stripping alloys containing nickel with gold, phosphorous or chromium from stainless steel and related nickel base alloys

Brief Summary Text (14):

The organic corrosion inhibitor is an acetylenic alcohol, preferably 2-butyne 1,4 diol, ethoxylated butyne, 1,4 diol or propargyl alcohol, and the organic surface active agent is a polyethoxylated amine or diamine, preferably polyoxyethylene cocamine, polyoxyethylene soyaamine, polyoxyethylene oleylamine, polyoxyethylene octadecylamine or N,N',N'-polyoxyethylene (15)-N-tallow 1,3 diaminopropane.

Brief Summary Text (36):

In accordance with the invention, an organic surface active agent which is compatible with the working solution and effective to reduce surface tension and, preferably contribute additional corrosion inhibition, is provided in the working solution, preferably in a concentration ranging from about 1 to 30 grams per liter, based upon the amount of nitric acid present, and, most preferably, in a concentration ranging from about 1.0 to 3.0 grams per liter. Preferably, a polyethoxylated amine or diamine, for example polyoxyethylene cocoamine, polyoxyethylene soyaamine, polyoxyethylene oleylamine, polyoxyethylene octadecylamine or N,N',N'-polyoxyethylene (15)-N-tallow 1,3 diaminopropane, may be utilized as the organic surface active agent. Not only do these surface active agents appear to maintain the solubility of the corrosion inhibitor, but they also appear to have a synergistic effect, in combination with the organic corrosion inhibitor, to provide improved protection against intergranular attack or degradation of the substrate alloys.

Current US Class (3):252Current US Class (4):510

CLAIMS:

9. The improved solution of claim 2 wherein said organic surface active agent is selected from polyethoxylated amines or diamines.

13. An improved solution for selectively stripping gold/nickel brazing alloys from a substrate formed from 300 or 400 series Stainless Steels, Hastelloy, Inconel or equivalent alloys, said solution comprising:

- (a) nitric acid in a concentration ranging from about 40% to about 72% by weight;
- (b) potassium ion in a concentration ranging from about 3.75 to 60 grams per liter of nitric acid;
- (c) chloride ion in a concentration ranging from about 3.75 to about 90 grams per liter of nitric acid;
- (d) ferric ion in a concentration ranging from about 3.75 to 60 grams per liter of

nitric acid;

(e) a polyethoxylated amine or diamine in a concentration ranging from about 1.0 to 30 grams per liter of nitric acid; and

(f) an acetylenic alcohol in a concentration ranging from about 1.0 to 30 grams per liter of nitric acid.

14. An improved solution for selectively stripping gold/nickel, nickel/phosphorous or nickel/chromium alloy from a substrate formed from 300 or 400 series Stainless Steels, Hastelloy, Inconel or equivalent alloys, said solution comprising nitric acid in a concentration ranging from about 40% to 72% by weight, potassium ion in a concentration ranging from 7.5 to 15 grams per liter of nitric acid, chloride ions ranging between about 15 to 27.5 grams per liter of nitric acid, ferric ion in a concentration ranging from about 3.75 to 15.0 grams per liter of nitric acid, an acetylenic alcohol ranging from about 1.0 to 3.0 grams per liter of nitric acid, and a polyethoxylated amine or diamine ranging from about 1.0 to 3.0 grams per liter of nitric acid.

18. An improved method for selectively removing gold/nickel, nickel/phosphorous or nickel/chromium alloy from substrates formed from 300 or 400 series Stainless Steels, Hastelloy, Inconel or equivalent alloys, said method comprising the steps of:

(a) preparation of a working solution from concentrated nitric acid, one or more chloride salts selected from the group consisting of alkali metal chlorides, ferric chloride, aluminum chloride, calcium chloride, nickel chloride or magnesium chloride, an acetylenic alcohol and a polyethoxylated amine or diamine, and

(b) application of said working solution to said substrate, at a temperature ranging between 70.degree. to 130.degree. F., for between 2 to 24 hours.

21. The method of claim 18 wherein said polyethoxylated amine or diamine is either polyoxyethylene cocamine, polyoxyethylene soyaamine, polyoxyethylene oleylamine, polyoxyethylene octadecylamine or N,N',N'-polyoxyethylene (15)-N-tallow 1,3 diaminopropane.

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L31: Entry 70 of 75

File: USPT

Apr 21, 1981

DOCUMENT-IDENTIFIER: US 4263179 A

**** See image for Certificate of Correction ****

TITLE: Heavy-duty liquid detergent compositions containing alkoxyated alkylene diamines

Brief Summary Text (14):

The novel liquid detergent compositions according to the present invention consist essentially of, as necessary ingredients, surfactants, suitable totally hydroxyalkylated alkylene diamine, and water. The compositions may also contain various optional ingredients, such as solvents, hydrotroping agents, fabric brighteners, dyes, preservatives, perfumes, pigments, soil anti-redeposition agents, opacifiers, abrasives, suds builders, suds suppressants, etc. The above-indicated optional ingredients are considered as not importantly affecting the ability of compounds formulated in accordance with the present invention, i.e., ones containing suitable surfactants and suitable totally oxyalkylated alkylene diamines, to yield the desired result, i.e., a suitably performing phosphate-free liquid laundry detergent which does not form nitrosamines in detectable amounts.

Brief Summary Text (15):

The organic surfactants which can be used in accordance with the invention include various nonionic, anionic, amphoteric and/or zwitterionic surfactants singly or in combination. These include various alpha-olefin sulfonates, fatty alcohol sulfates, fatty alcohol ether sulfates, n-alkylphenol ethoxylates, dialkylphenol ethoxylates, fatty amine ethoxylates, fatty alcohol alkoxyates, fatty alkanolamides, fatty amine oxides, etc. A useful listing of the various commercially available surfactant compositions is contained in McCutcheon's "Detergents and Emulsifiers", and in principle, the particular detergent compositions contained in the examples presented hereinbelow may be modified by the substitution for the particular surfactants named therein of any of the other surfactants indicated in the above-mentioned work.

Brief Summary Text (18):

The totally oxyalkylated alkylene diamine may be present in an alkalizing amount of approximately 9 to 15 percent by weight of the composition. The use of N,N,N',N'-tetrakis(2-hydroxypropyl)ethylene diamine at a value in the range just indicated is predicated, as those skilled in the art will appreciate, upon the assumption that the remainder of the detergent composition is substantially neutral. The composition will be otherwise substantially neutral if the anionic surfactant (linear alkyl sulfonate) is used in its sodium-neutralized form, rather than in a free-acid form; the possibility exists that the anionic surfactant will be used in its free-acid form, and the N,N,N',N'-tetrakis(2-hydroxypropyl)ethylene diamine will also be used, in suitably greater corresponding amount, to serve not only as alkalizing agent but also as neutralizer for the free acid. Accordingly, it is proper to speak of detergent compositions which contain an alkalizing proportion of oxyalkylated alkylene diamine of 9 to 15 weight percent of such oxyalkylated alkylene diamine, thereby allowing for the possibility that such alkylene diamine may be present in greater quantities, for its alkalizing effect, if an anionic surfactant in the free-acid form is utilized.

Current US Class (1):

510

WEST

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L31: Entry 71 of 75

File: USPT

Jan 13, 1981

DOCUMENT-IDENTIFIER: US 4244832 A

TITLE: Phosphate-free machine dishwashing detergents useful at low temperatures

Brief Summary Text (24):

Those skilled in the art of nonionic surfactants will appreciate that these compounds are rather similar to the known "Tetronic" polyols marketed by BASF Wyandotte Corporation, which are compounds having the structure ##STR2## Such compounds are the subject of U.S. Pat. No. 2,979,528. That is, the known commercial polyols of this kind are also block polymers which start with the same tetrafunctional polyol, but the oxypropylene units are inside, and the oxyethylene units form the "caps" or the ends of the chains. This difference might not seem to be important, but it is the truth that these compounds simply do not have the same performance in machine dishwashing. It can be admitted that elsewhere in the field of nonionic surfactants which are block polymers containing oxyethylene and oxypropylene units, it is known that the ones where the oxypropylene units form the caps or ends of the chains are, other things being equal, lower-foaming, but it has not been evident to those skilled in the art of formulating dishwasher detergents that these alkylene-diamine-based oxypropylene-capped surfactants would ever be as good as they are. They make it possible not merely to avoid some of the foaming, as one might expect; they go further, making it possible to remove 27-minute-hardened partially cooked egg soil with a wash-water temperature of only 120.degree. F. (49.degree. C.), and the other thing that they do which is quite unexpected is that they make it possible to avoid the use of MSAP (monostearyl acid phosphate) or some other similar phosphate-containing agent for use is suppressing the particular kind of foaming that results from trying to wash dishes that are soiled with egg or equivalent proteinaceous matter.

Brief Summary Text (36):

The possibility of mixing a nonionic surfactant of the kind indicated above with some other suitable nonionic surfactant is also not to be overlooked. Other suitable nonionic surfactants include the low-foaming oxypropylenecapped block polymers of U.S. Pat. No. 3,036,118, such as "Pluronic 25R2" surfactant. Although in some instances the use of such auxiliary nonionic surfactant may make it possible to obtain equivalent satisfactory results with the use of somewhat less of the amine-based nonionic surfactant of the kind indicated above, it will still be essential in most instances to have a dishwasher-detergent composition which contains 1 to 9 weight percent, preferably 2 to 6 weight percent, of an amine-based oxypropylene-capped nonionic surfactant of the kind indicated above.

Current US Class (1):

510

WEST

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L31: Entry 74 of 75

File: USPT

Mar 6, 1979

DOCUMENT-IDENTIFIER: US 4142999 A

TITLE: Stabilized liquid enzyme containing compositions

Abstract Text (1):

A liquid concentrate which has a content of proteases and/or amylases, non-ionic and optionally anionic surfactants, water and optionally solvents selected from mono- and poly-valent alcohols and ethers thereof, which concentrate contains an alkoxylated alkylamine of the formula ##STR1## wherein R is alkyl of 4 to 20 carbon atoms, R' is hydrogen or alkyl of 1 to 10 carbon atoms, provided that the sum of the carbon atoms in R and R' is from 9 to 19, R" is hydrogen, methyl or hydroxymethyl, x is an integer from 1 to 5, and y is 0 or an integer from 1 to 5, provided that the sum of x and y is from 1 to 10; as well as its use as a washing and cleaning agent and washing and cleaning formulations containing the same.

Detailed Description Text (2):

These and other objects of the present invention have been achieved by the discovery of a stabilized liquid enzyme-containing concentrate which can be used as a washing and cleaning agent and which comprises a content of proteases and/or amylases, non-ionic and, optionally, anionic surfactants, water and, optionally, solvents or additional substances promoting the stability of the enzymes selected from the class of mono- and polyvalent alcohols and ethers thereof, and an effective amount of an alkoxylated alkylamine of the formula ##STR2## wherein R is an alkyl group having 4 to 20 carbon atoms, R' is hydrogen or an alkyl group having 1 to 10 carbon atoms, provided that the total carbon atoms of R and R' is from 9 to 19 inclusive, R" is hydrogen, methyl or hydroxymethyl, x is an integer of from 1 to 5 inclusive, and y is 0 or an integer from 1 to 5 inclusive, provided that the sum of x and y is from 1 to 10 inclusive.

Detailed Description Text (3):

More particularly, the invention provides liquid concentrates, usable as washing and cleaning agents, comprising an enzyme preparation containing an enzyme selected from the group consisting of proteases, amylases, and mixtures thereof, non-ionic and, optionally anionic, surfactants, water and, optionally solvents or additional substances promoting the stability of the enzymes selected from the group consisting of mono- or polyvalent alcohols and ethers thereof, and, relative to 1 part by weight of said enzyme preparation having an activity of 10 to 10,000 SKBE/gm amylase or of 1,000 to 1,500,000, preferably 10,000 to 800,000, PE/gm protease, 2 to 500 parts by weight of an alkoxylated alkylamine of the formula ##STR3## wherein R is an alkyl group having 4 to 20 carbon atoms, R' is a member selected from the group consisting of hydrogen and an alkyl group having 1 to 10 carbon atoms, provided that the total of the carbon atoms of R and R' is from 9 to 19 inclusive, R" is a member selected from the group consisting of hydrogen, a methyl group, and a hydroxymethyl group, x is an integer from 1 to 5 inclusive, and y is 0 or an integer from 1 to 5 inclusive, provided that the sum of x and y is from 1 to 10 inclusive.

Detailed Description Text (4):

Preferably, the quantity of alkoxylated N-alkylamines, relative to 1 part by weight of the above enzyme preparation of the invention, is 5 to 200 parts by weight.

Detailed Description Text (5):

Especially suitable alkoxylated N-alkylamines of the invention contain straight-chain or branched alkyl groups having a total of 10 to 20 carbon atoms as

their ##STR4## residues. The alkylamines containing straight-chain alkyl groups having a total of 12 to 18 carbon atoms are preferred. In the last-mentioned preferred alkoxylated alkylamines, the group ##STR5## is thus a straight-chain alkyl group. The amino group can be located at the terminal position as well as at an inner position. Suitable starting materials are, for example, the primary C.sub.10-C.sub.20 amines produced from fatty acid nitriles of natural origin by hydrogenation, such as decylamine, dodecylamine, tetradecylamine, hexadecylamine, octadecylamine, eicosylamine and mixtures thereof, such as coconut alkyl amine and tallow alkyl amine. The amines can also be of synthetic origin, as for example, derived from oxo compounds or obtained from mineral oil hydrocarbons. This group includes, in addition to the above-mentioned amines, undecylamine, tridecylamine, pentadecylamine and heptadecylamine, wherein the amino group may be optionally located on any carbon atom of the alkyl chain.

Detailed Description Text (6):

The alkylene oxide groups, on which the polyether radicals of the alkoxylated alkylamines of the invention are based, can be derived from ethylene oxide (R" = H), propylene oxide (R" = CH.sub.3) or glycidol (R" = --CH.sub.2 OH) or mixtures thereof. Preferably, the derivatives of ethylene oxide are used in the invention. The alkoxylated alkylamines having a total of 1 to 6 ethylene glycol ether groups have proved to be particularly successful.

Detailed Description Text (7):

Examples of suitable alkoxylated alkylamines (the abbreviation EO representing added ethylene oxide groups) are dodecylamine-1 EO, dodecylamine-2 EO, dodecylamine-3 EO, dodecylamine-4 EO, dodecylamine-5 EO, tetradecylamine-1 EO, tetradecylamine-2 EO, tetradecylamine-3 EO, tetradecylamine-4 EO, tetradecylamine-5 EO, hexadecylamine-2 EO, hexadecylamine-3 EO, hexadecylamine-4 EO, hexadecylamine-5 EO, hexadecylamine-6 EO, octadecylamine-2 EO, octadecylamine-3 EO, octadecylamine-4 EO, octadecylamine-5 EO, octadecylamine-6 EO, coconut alkylamine-1 EO, coconut alkylamine-2 EO, coconut alkylamine-3 EO, coconut alkylamine-4 EO, coconut alkylamine-5 EO, tallow alkylamine-2 EO, tallow alkylamine-3 EO, tallow alkylamine-4 EO, tallow alkylamine-5 EO, tallow alkylamine-6 EO.

Detailed Description Text (24):

Further non-ionic surfactants, particularly suitable for dish-washing agents for use in machines, are the water-soluble addition products of ethylene oxide onto polyoxypropylene glycol and alkylene diamine polyoxypropylene glycol. Particularly suitable are the water-soluble polyethylene oxide adducts to polypropylene glycol and ethylene diamine polypropylene glycol, which contain 20 to 250 ethylene glycol ether groups and 10 to 100 propylene glycol ether groups. Said compounds normally contain 1 to 5 ethylene glycol units per propylene glycol unit. Ethoxylated and subsequently propoxylated fatty alcohols, secondary alcohols and alkyl phenols having 5 to 35 ethylene glycol or propylene glycol ether groups in each case, are also suitable for the same purpose. Also suitable are ethoxylated primary and secondary alcohols and alkyl phenols having a terminal hydroxyl group which is alkylated, acylated or acetalized. Agents of the invention having an increased foaming action can contain, instead of the aforesaid substances, fatty acid monoalkanolamides and dialkanolamides, such as the mono- or diethanolamide or mono- or diisopropanolamide of lauric-, myristic-, palmitic- and oleic acid or of coconut fatty acids.

Detailed Description Text (37):

0.05 to 20% alkoxylated alkylamine, which corresponds in the ratios indicated above to the quantity of the enzyme preparation,

Detailed Description Text (49):

In the following TABLE I are listed the enzymes and ethoxylated alkylamines used in ten typical liquid concentrates of the invention. In this TABLE I coconut alkylamine is an amine produced by hydrogenation of coconut fatty acid nitriles having chain lengths of C.sub.12 -C.sub.18 with an average chain length of 13.6. The tallow alkylamine, produced in a corresponding manner, had chain lengths of C.sub.16 -C.sub.18 with an average chain length of 17.2. The C.sub.11-14 -alkylamine, produced from olefins having an average chain length of C.sub.12.5, had amino groups statistically distributed over the hydrocarbon chain. The general formula of the

C.sub.11-14 -alkylamine-2EO is as follows: ##STR7## The alkylamine of TABLE I were ethoxylated, the abbreviation in the table consisting of a number followed by EO indicating the number of ethylene oxide groups added.

Detailed Description Text (50):

In the ten comparison liquid concentrates of TABLE I, designated in each case by the letter "a", the ethoxylated amines of the invention are replaced by ethoxylated alcohols (non-ionic surfactants).

Detailed Description Text (54):

These results show that the stability of the enzymes is substantially increased by the addition, in accordance with the invention, of alkoxylated alkylamines.

Detailed Description Paragraph Table (3):

TABLE I										Example 1 2 3 4 5 6 7 8 9 10									
Enzyme I										0.1	--	0.1	0.1	0.1	--	--	--	--	0.1
Enzyme II -- 1.0 -- -- -- 1.0 1.0 1.0 1.0 --										Coconut alkylamine- 2 EO 20 10 -- -- --									
-- 10 -- -- -- Tallow alkyl- amine-5 EO -- --										10 10 -- -- -- 10 -- 10 C.sub.11-14									
-al- kylamine 2 EO -- -- -- -- 10 10 -- --										10 --									
										Comparison 1a 2a 3a 4a 5a 6a 7a 8a 9a 10a									
Enzyme I										0.1	--	0.1	0.1	0.1	--	--	--	1	0.1
Enzyme II -- 1.0 -- -- -- 1.0 1.0 1.0 --										5.0 C.sub.16-18 - fatty al- cohols-5 EO --									
-- -- 10 -- 10 5.0 10 10 5.0 C.sub.16-18 -										fatty al- cohols-10 EO 20 10 10 -- 10 --									
5.0 -- -- --																			

Current US Class (2):

510

CLAIMS:

1. A stabilized liquid concentrate, useable as a washing and cleaning agent, consisting essentially of

(a) 0.01 to 5% of an enzyme preparation containing enzymes selected from the group consisting of proteases, amylases, and mixtures thereof,

(b) 0.5 to 40% of a nonionic surfactant,

(c) 0 to 30% of an anionic surfactant,

(d) 20 to 50% of water,

(e) 0 to 50% of a solvent or additional water-soluble substance promoting the stability of the enzymes selected from the group consisting of monovalent alcohols having 1 to 3 carbon atoms, polyvalent alcohols having 2 to 6 carbon atoms and 2 to 6 hydroxyl groups, and ethers thereof, and,

(f) relative to 1 part by weight of said enzyme preparation, 2 to 500 parts by weight of an alkoxylated alkylamine of the formula ##STR8## wherein R is an alkyl group having 4 to 20 carbon atoms, R' is a member selected from the group consisting of hydrogen and an alkyl group having 1 to 10 carbon atoms, provided that the total of the carbon atoms of R and R' is from 9 to 19 inclusive, R" is a member selected from the group consisting of hydrogen, a methyl group, and a hydroxymethyl group, x is an integer from 1 to 5 inclusive, and y is 0 or an integer from 1 to 5 inclusive, provided that the sum of x and y is from 1 to 10 inclusive.

2. The concentrate of claim 1 consisting essentially of (a) 0.01 to 5% of the enzyme preparation, (b) 0.5 to 20% of alkoxylated alkylamine, (c) 0.5 to 40% of nonionic surfactant and (d) 20 to 50% of water.

4. The concentrate of claim 1 consisting essentially of

(a) 0.01 to 5% of the enzyme preparation,

(b) 0.5 to 20% of the alkoxylated alkylamine,

(c) 0 to 50% of monovalent alcohols having 1 to 3 carbon atoms, polyvalent alcohols having 2 to 6 carbon atoms and 2 to 6 hydroxyl groups and/or partial ethers thereof,

(d) 0.5 to 40% of nonionic surfactants,

(e) 0 to 30% of soap and/or sulfate- or sulfonate surfactant,

(f) 0 to 25% of a member selected from the group consisting of hydroxyalkylamines having 2 to 8 carbon atoms per hydrocarbon radical, and derivatives of said hydroxyalkylamines which have at least one hydroxyl group in the molecule and are substituted on nitrogen by C.sub.1-4 alkyl radicals, or by cyclohexyl or cyclopentyl groups and derivatives of said hydroxyalkylamines which are substituted on nitrogen by groups of the formula ##STR9## wherein R.sub.1 is alkylene of 2 or 3 carbon atoms, and R.sub.2 is alkyl of 1 or 2 carbon atoms,

(g) 0 to 1% of antimicrobial substances,

(h) 0 to 20% of complex-forming builder substances,

(i) 0 to 10% of solubilizing intermediaries selected from the group consisting of toluene-, xylene-, or cumene sulfonate, alkyl sulfates or alkane sulfonates having 6 to 8 carbon atoms in the hydrocarbon radical, and urea,

(j) 0 to 1% of optical brighteners, dyes, perfumes, and opacifiers, and

(k) 20 to 50% of water.

6. The concentrate of claim 5 which contains 5 to 200 parts by weight of the alkoxylated alkylamine to 1 part by weight of the enzyme preparation.

8. The concentrate of claim 5 wherein the ##STR10## chain of the alkoxylated alkylamine is a straight-chain alkyl group having a total of 12 to 18 carbon atoms.

14. In the process of stabilizing a liquid concentrate, useable as a washing and cleaning agent, consisting essentially of

(a) 0.01 to 5% of an enzyme preparation containing enzymes selected from the group consisting of proteases, amylases, and mixtures thereof,

(b) 0.5 to 40% of a nonionic surfactant,

(c) 0 to 30% of an anionic surfactant,

(d) 20 to 50% of water, and

(e) 0 to 50% of a solvent or additional water-soluble substance promoting the stability of the enzymes selected from the group consisting of monovalent alcohols having 1 to 3 carbon atoms, polyvalent alcohols having 2 to 6 carbon atoms and 2 to 6 hydroxyl groups, and ethers thereof,

the improvement which consists essentially of using as stabilizer, relative to 1 part by weight of said enzyme preparation, 2 to 500 parts by weight of an alkoxylated alkylamine of the formula ##STR12## wherein R is an alkyl group having 4 to 20 carbon atoms, R' is a member selected from the group consisting of hydrogen and an alkyl group having 1 to 10 carbon atoms, provided that the total of the carbon atoms of R and R' is from 9 to 19 inclusive, R" is a member selected from the group consisting of hydrogen, a methyl group, and a hydroxymethyl group, x is an integer from 1 to 5 inclusive, and y is 0 or an integer from 1 to 5 inclusive, provided that the sum of x and y is from 1 to 10 inclusive.

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 6 of 6 returned.**☐ 1. Document ID: US 5538653 A

L6: Entry 1 of 6

File: USPT

Jul 23, 1996

US-PAT-NO: 5538653

DOCUMENT-IDENTIFIER: US 5538653 A

TITLE: Friction modifiers and antiwear additives for fuels and lubricants

DATE-ISSUED: July 23, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Avery; Noyes L.	Bryn Mawr	PA		
Carey; James T.	Medford	NJ		
Hiebert; John	Levittown	PA		
Horodysky; Andrew G.	Cherry Hill	NJ		

US-CL-CURRENT: 508/229

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RWIC
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☐ 2. Document ID: US 5482521 A

L6: Entry 2 of 6

File: USPT

Jan 9, 1996

US-PAT-NO: 5482521

DOCUMENT-IDENTIFIER: US 5482521 A

TITLE: Friction modifiers and antiwear additives for fuels and lubricants

DATE-ISSUED: January 9, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Avery; Noyes L.	Bryn Mawr	PA		
Barry; Edward G.	Woodbury	NJ		
Carey; James T.	Medford	NJ		
Crocker; Lisa S.	Belle Mead	NJ		
Feng; Flora W.	StonyBrook	NY		
Hiebert; John	Levittown	PA		
Horodysky; Andrew G.	Cherry Hill	NJ		
Nelson; Lloyd A.	Edison	NJ		

US-CL-CURRENT: 44/344; 44/342, 44/343, 548/255

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

☐ 3. Document ID: WO 2002102153 A2 US 20030096708 A1

L6: Entry 3 of 6

File: DWPI

Dec 27, 2002

DERWENT-ACC-NO: 2003-183954

DERWENT-WEEK: 200336

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Concentrates useful in aqueous pesticidal and/or herbicidal compositions
comprise etheramine surfactantsINVENTOR: AGBAJE, H E; BATES, C ; BECHER, D Z ; BRINKER, R J ; SEIFERT-HIGGINS, S ;
BATES, C IPRIORITY-DATA: 2001US-0988340 (November 19, 2001), 2001WO-US16550 (May 21, 2001),
2001US-0926521 (November 14, 2001), 2001US-273234P (March 2, 2001), 2001US-274368P
(March 8, 2001), 2002US-0926521 (April 26, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2002102153 A2	December 27, 2002	E	057	A01N025/30
US 20030096708 A1	May 22, 2003		000	A01N025/04

INT-CL (IPC): A01 N 25/04; A01 N 25/16; A01 N 25/30; A01 N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

☒ 4. Document ID: US 5100438 A

L6: Entry 4 of 6

File: DWPI

Mar 31, 1992

DERWENT-ACC-NO: 1992-131402

DERWENT-WEEK: 199216

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TITLE: Coal water slurry - contg. rheological additive comprising ester-amide(s) of
dimer or trimer carboxylic acids

INVENTOR: KAIN, W S; STAKER, D D

PRIORITY-DATA: 1988US-0224598 (July 26, 1988), 1986US-0848603 (April 7, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5100438 A	March 31, 1992		008	

INT-CL (IPC): C10L 1/32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 5. Document ID: US 4681692 A

L6: Entry 5 of 6

File: DWPI

Jul 21, 1987

DERWENT-ACC-NO: 1987-220920

DERWENT-WEEK: 198731

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TITLE: Prepn. of novel imidazoline-derived internal acid phosphate - and amine
derivs. thereof, used as additives for lubricants

INVENTOR: HORODYSKY, A G

PRIORITY-DATA: 1985US-0750196 (July 1, 1985)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 4681692 A	July 21, 1987		004	

INT-CL (IPC): C10M 129/00; C10M 137/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 6. Document ID: US 4657684 A

L6: Entry 6 of 6

File: DWPI

Apr 14, 1987

DERWENT-ACC-NO: 1987-122315

DERWENT-WEEK: 198717

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Oxazoline derived internal acid phosphate - useful as wear and friction
reducing additive for lubricants

INVENTOR: HORODYSKY, A G

PRIORITY-DATA: 1985US-0746484 (June 19, 1985)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 4657684 A	April 14, 1987		005	

INT-CL (IPC): C10M 129/00; C10M 137/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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Terms	Documents
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L6: Entry 3 of 6

File: DWPI

Dec 27, 2002

DERWENT-ACC-NO: 2003-183954

DERWENT-WEEK: 200336

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Concentrates useful in aqueous pesticidal and/or herbicidal compositions
comprise etheramine surfactants

INVENTOR: AGBAJE, H E; BATES, C ; BECHER, D Z ; BRINKER, R J ; SEIFERT-HIGGINS, S ;
BATES, C I

PATENT-ASSIGNEE: MONSANTO TECHNOLOGY LLC (MONS)

PRIORITY-DATA: 2001US-0988340 (November 19, 2001), 2001WO-US16550 (May 21, 2001),
2001US-0926521 (November 14, 2001), 2001US-273234P (March 2, 2001), 2001US-274368P
(March 8, 2001), 2002US-0926521 (April 26, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2002102153 A2	December 27, 2002	E	057	A01N025/30
US 20030096708 A1	May 22, 2003		000	A01N025/04

DESIGNATED-STATES: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR
TT TZ UA UG US UZ VN YU ZA ZM ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE
LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO2002102153A2	May 21, 2002	2002WO-US15977	
US20030096708A1	March 2, 2001	2001US-273234P	Provisional
US20030096708A1	March 8, 2001	2001US-274368P	Provisional
US20030096708A1	May 21, 2001	2001WO-US16550	CIP of
US20030096708A1	November 19, 2001	2001US-0988340	
US20030096708A1	April 26, 2002	2002US-0926521	CIP of

INT-CL (IPC): A01 N 25/04; A01 N 25/16; A01 N 25/30; A01 N 57/20

RELATED-ACC-NO: 2002-154464; 2002-759805 ; 2003-239087

ABSTRACTED-PUB-NO: WO2002102153A

BASIC-ABSTRACT:

NOVELTY - Cationic surfactant composition (C1) comprises a first surfactant (A) and
a second surfactant (B).

DETAILED DESCRIPTION - A cationic surfactant composition (C1) comprises a first
surfactant (A) and a second surfactant (B). (A) Is:

(i) dialkoxylated amine or quaternary ammonium salt of formula

$R1N((R2O)xR3)((R2O)yR3)$ (I) or $R1-N+((R2O)xR3)((R2O)yR3)-R4$ X- (II);

(ii) aminated alkoxyated alcohol of formula $R'1O-(R2O)x'-R'3-N(R'4)-R'5$ (III) or $R'1O-(R2O)x'-R'3-N+((R'4)(R'5))-R14$ A- (IV);

(iii) $R1O-R''2-N(R''3)-R''4$ (V) or $R1O-R''2-N+((R''3)(R''5))-R''4$ A- (VI);

(iv) etheramine or ether quaternary ammonium salt of formula alkoxyated poly(hydroxyalkyl)amine of formula $R'1-(OR2)a'-(R''4)b-N(R3)-R5$ (VII);

(v) monoalkoxyated amine of formula $R1a-N((R2O)x'R7)-R4a$ (VIII); monoalkoxyated quaternary ammonium salt of formula $R'1-N+((R'3)(R'4a))-(R2O)xR3a$ X- (IX); or

(vi) an amine of formula $Ru-X-C(Rv)(Rw)-C(Rr)(Rs)-O-(R2O)aR'''3$ (X), $R8-N+((Ru)(R9))-C(Rv)(Rw)-C(Rr)(Rs)-O-(R2O)aR'''3$ A- (XI), $Ru-X-(R2O)a-C(Rv)(Rw)-C(Rr)(Rs)-O-(R2O)aR'''3$ (XII) or $Ru-N((R8)(R9))-(R2O)a-C(Rr)(R)-sO-(R2O)aR'''3$ (XIII).

(B) Is:

(i) an alkoxyated diamine of formula $Rax-(OR2)a'-N(Raa)-Rm-N(Rab)-Rac$ (XIV), diamine of formula $Rbb-(X')b-(R''2)n-N(Rbb)-(RaeO)a'-R''2-N(Rbb)-R-bb$ (XV), $Rbb-N(Rbb)-(RaeO)af-R2-N(Rbb)-Rbb$ (XVI), $Rcc-(Xa)na-N(Rcc)-Rdd-N(-R'''1)-Rcc$ (XVII) or $R'1-(R2O)m'-N(R'1)-Rff-N(R'1)-(R2O)n'-R'1$ (XVIII);

(ii) di-poly(hydroxyalkyl)amine of formula $R'''5-N(Rgg)-Rdd-N(Rgg)-R'''5$ (XIX) or $(Rhh)N(Rhi)-(CH2)xx-CH2-N(R'1)-CH2-(CH2)yy-N(Rhj)(Rhk)$ (XX); or

(iii) alkoxyated triamine of formula $(R2)(R3)N(CH2)x-CH2-Nr-(CH2)y-N-(R4)-(R5)$ (XXI).

$R1, R4 = Q, R5SR6$ or $(R2O)zR3$;

$Q = H$ or optionally substituted 1-30C hydrocarbyl;

$R2, Rae = 2-4C$ alkylene;

$R3 = H$ or linear or branched 1-22C alkyl;

$R5 =$ linear or branched 6-30C alkyl;

$R6 =$ linear or branched 4-15C alkyl;

$x-z = 1-40$;

X-, A- = anion;

$R'1, R'''3, R8, R13, R15 = Q$;

$R'3, R'6 = 1-6C$ optionally substituted hydrocarbylene;

$R'4, R14 = H, 1-30C$ optionally substituted hydrocarbyl, OH substituted hydrocarbyl, $-(R6)n-(R2O)yR7, -C(=NR11)NR12R13, -C(=O)NR12R13$ or $C(=S)NR12R13$;

$R'5 = -(R6)n-(R2O)y'R7$;

$R7 = H$ or linear or branched 1-4C alkyl;

$R11-R13 = H$ or optionally substituted hydrocarbyl;

$n, b = 0-1$;

$x', y' = 1-60$;

$R''2 = 2-30C$ optionally substituted hydrocarbylene;

$R''^3-R''^5 = Q$ or $-(R_2O)aR_7$;

$a = 1-50$;

R''^4 = optionally substituted 1-30C hydrocarbylene;

R''^5 = hydroxyalkyl, polyhydroxyalkyl or poly(hydroxyalkyl)alkyl;

$a' = 0-30$;

R_{1a}, R_{4a} = optionally substituted 1-30C hydrocarbyl or $R_5SR''^6$;

R''^6 = optionally substituted 4-15C hydrocarbyl;

R'_{4a} = optionally substituted 1-30C hydrocarbyl;

$R_{3a} = H$ or linear or branched 1-30C alkyl;

$R_u, R_9 = Q$ or $-(R_2O)pR_{13}$;

$R_s = -(CH_2)aOR_{13}$ or $(CH_2)aO(R_2O)aR''^3$;

$R_r, R_w, R_v = Q$ or R_s ;

$R_{14} = Q$ or $(CH_2)aO(R_2O)aR''^3$;

$X = O, NR_{14}, C(O), C(O)O, OC(O), NR_{15}C(O), CONR_{15}, S, SO$ or SO_2 ;

R_{ax} = optionally substituted 8-30C hydrocarbyl;

$R_{aa}-R_{ac} = Q$ or $(R_2O)aR_7$;

R_m = optionally substituted 2-6C hydrocarbylene, $-C(=NR''^1)N(R''^1)_2$, $-C(=O)N(R''^1)_2$, $C(=S)N(R''^1)_2$, $C(=NR''^1)$, $C(S)$ or $C(O)$;

$R_{bb} = Q$ or $-(R_{ae}O)adR_{3a}$;

$ad = 1-30$;

$X' = O, NR_{ae}, C(O), C(O)O, OC(O), NR_{11}C(O), C(O)NR_{11}, S, SO$ or SO_2 ;

$af = 3-60$;

$R_{cc} = Q$ or $R_{xy}(OR_{xz})naOR^1$;

$R_{dd} = 2-18C$ optionally substituted hydrocarbylene;

R_{xy}, R_{xz} = optionally substituted 2-4C hydrocarbyl;

$na = 0-40$;

$X_a = C(O)$ or SO_2 ;

$m', n' = 0-50$;

R_{ff} = optionally substituted 2-6C hydrocarbylene or $(R_2O)p'R_2$;

$p' = 0-60$;

R_{gg} = optionally substituted 1-22C hydrocarbyl or H ;

$xx, yy = 1-4$;

$R_{hh}-R_{hk} = Q$ or $(R''^8)n(R_2O)nbR_7$;

nb = 1-10;

R''8 = optionally substituted 1-6C hydrocarbylene; and

R' = 1-30C optionally substituted hydrocarbyl.

INDEPENDENT CLAIMS are also included for:

- (1) a pesticidal composition comprising (C1) and at least one pesticide;
- (2) an aqueous herbicidal composition comprising glyphosate and (C1);
- (3) an aqueous herbicidal concentrate composition (C2) comprising glyphosate in the form of potassium, monoammonium, diammonium, sodium, monoethanolamine, n-propylamine, ethylamine, ethylenediamine, hexamethylenediamine and/or trimethylsulfonium salt in a solution in aqueous medium in an amount of in excess of 300 g acid equivalent/liter of the composition and (C1) (20-300) g/l;
- (4) a cationic surfactant composition (C3) comprising at least one etheramine of formula $R_{10}-R''^2-N(R''^3)-R''^4$ and at least one diamine of formula $R_{bb}-(X')b-(R''^2)n-N(R_{bb})-(RaeO)a'-R''^2-N(R_{bb})-R_{bb}$;
- (5) an aqueous herbicidal composition comprising glyphosate and (C3);
- (6) a herbicidal method involving diluting in water (C2) to form an application mixture and applying the application mixture to foliage of a plant;
- (7) a herbicidal method involving mixing (C1) with a herbicide to form herbicidal composition, diluting in water to form application mixture and applying the application mixture to foliage of a plant or plants;
- (8) a herbicidal method involving diluting (C3) in water to form an application mixture and applying the mixture to foliage of plant; and
- (9) a herbicidal method involving mixing (C3) with herbicide to form herbicidal composition, diluting in water to form application mixture and applying the mixture to foliage of a plant.

ACTIVITY - Pesticide; Herbicide.

A composition (C') comprising glyphosate (480 g a.e./l) and etheramine was prepared and tested for inhibition of velvetleaf growth. A control was prepared using Roundup Ultramax (RTM) composition. (C') and control (100 g/ha) inhibited velvetleaf growth by 24.2 and 14.2 %, respectively.

MECHANISM OF ACTION - None given.

USE - In aqueous pesticidal and/or aqueous herbicidal compositions (claimed); and for controlling growth of weeds and vegetation.

ADVANTAGE - The composition is stable after storage at 50 deg. C for at least 14 days, has cloud point not lower than 50 deg. C, viscosity less than 1000 (preferably less than 225) centipoise at 0 deg. C and 45/s shear rate. The herbicidal concentrate does not exhibit crystallization of the glyphosate when stored at 0 to -10 deg. C for 7 days. The composition enhances efficacy and stabilizes the aqueous pesticidal composition. The etheramines used are compatible with glyphosate formulation. The composition has improved viscosity and storage stability characteristics with herbicidal efficacy similar to or greater than the commercially available glyphosate formulations.

ABSTRACTED-PUB-NO: WO2002102153A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/0

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L6: Entry 4 of 6

File: DWPI

Mar 31, 1992

DERWENT-ACC-NO: 1992-131402

DERWENT-WEEK: 199216

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TITLE: Coal water slurry - contg. rheological additive comprising ester-amide(s) of dimer or trimer carboxylic acids

Basic Abstract Text (2):

(I) is an aliphatic amine selected from 2-ethylhexylamine, dodecylamine and N,N-dimethyl-1,3-diaminopropane; and alkanolamine selected from (di)ethanolamine, N-(m)ethyl ethanolamine, (di)isopropanolamine and N-aminoethylethanolamine; or an etheramine selected from polyether monoamines of formula: (where R = radical selected from n-C(10-12)H(21-25)O-, n-C4H9OCH2CH2O-, and CH3OCH2CH2O-; R' = H or methyl; and n = 300-1000), polyether diamines of the formula: (where x = integer such that the average mol. wt. is 200-1000) polyether diamines of the formula.

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L6: Entry 4 of 6

File: DWPI

Mar 31, 1992

DERWENT-ACC-NO: 1992-131402

DERWENT-WEEK: 199216

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Coal water slurry - contg. rheological additive comprising ester-amide(s) of dimer or trimer carboxylic acids

INVENTOR: KAIN, W S; STAKER, D D

PATENT-ASSIGNEE: HENKEL CORP (HENK)

PRIORITY-DATA: 1988US-0224598 (July 26, 1988), 1986US-0848603 (April 7, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5100438 A	March 31, 1992		008	

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 5100438A	July 26, 1988	1988US-0224598	

INT-CL (IPC): C10L 1/32

RELATED-ACC-NO: 1994-176123

ABSTRACTED-PUB-NO: US 5100438A

BASIC-ABSTRACT:

A coal water slurry contg. 0.25-2.0 % of a rheological additive is claimed. It consists of an esteramide of a dimer acid where approx. 1/2 of the carboxyl gps. are esterified with a polyethylene glycol of mol. wt. 3000-12000 and a first portion of the remaining carboxyl gps. are reacted with a cpd. (I) and a second portion of the remaining carboxyl gps. are converted to an NH₄, Na or K salt.

(I) is an aliphatic amine selected from 2-ethylhexylamine, dodecylamine and N,N-dimethyl-1,3-diaminopropane; and alkanolamine selected from (di)ethanolamine, N-(m)ethyl ethanolamine, (di)isopropanolamine and N-aminoethylethanolamine; or an etheramine selected from polyether monoamines of formula: (where R = radical selected from n-C(10-12)H(21-25)O-, n-C₄H₉OCH₂CH₂O-, and CH₃OCH₂CH₂O-; R' = H or methyl; and n = 300-1000), polyether diamines of the formula: (where x = integer such that the average mol. wt. is 200-1000) polyether diamines of the formula.

(Where a, b and c are integers greater than 1 such that the average mol. wt. is 500-6000).

USE/ADVANTAGE - Coal water slurries having high solids contents are stable for extended periods of time due to the use of the additive. (0/0)

ABSTRACTED-PUB-NO: US 5100438A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/0

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L6: Entry 5 of 6

File: DWPI

Jul 21, 1987

DERWENT-ACC-NO: 1987-220920

DERWENT-WEEK: 198731

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TITLE: Prepn. of novel imidazoline-derived internal acid phosphate - and amine derivs. thereof, used as additives for lubricants

Basic Abstract Text (1):

A novel product consists of a Zwitterionic imidazoline-derived internal acid phosphate (I) prepd. by reacting a hydroxyalkyl hydrocarbyl imidazoline (II) with P205 R = 6-30C hydrocarbyl, opt. substd. with S, O or N, R1 = 1-6C hydrocarbyl opt. substd. with S or O. (I) is opt. further reacted with a 2-32C hydrocarbyl amine, diamine, etheramine or etherdiamine (IV) to produce an amine-containing internal imidazoline acid phosphate (III). A compsn. comprises a major proportion of an oil of lubricating viscosity, or a grease prepd. therefrom, and a minor fractor of cpd. (I) or (III).

WEST**End of Result Set**

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L6: Entry 6 of 6

File: DWPI

Apr 14, 1987

DERWENT-ACC-NO: 1987-122315

DERWENT-WEEK: 198717

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TITLE: Oxazoline derived internal acid phosphate - useful as wear and friction reducing additive for lubricants

Basic Abstract Text (2):

USE/ADVANTAGE - Prod. (I), which is believed to consist at least in part of cpd. (V), is an antiwear and friction-reducing additive for lubricants; it has greater friction-reducing activity than prior art acid phosphates. (I) may be further reacted with an amine (e.g. stearylamine, cocamine, a diamine or etheramine) to yield an oxazoline acid phosphate amine.

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 5 of 5 returned.**☐ 1. Document ID: US 20030096708 A1

L8: Entry 1 of 5

File: PGPB

May 22, 2003

PGPUB-DOCUMENT-NUMBER: 20030096708

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030096708 A1

TITLE: Pesticide concentrates containing etheramine surfactants

PUBLICATION-DATE: May 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Agbaje, Henry E.	St. Louis	MO	US	
Becher, David Z.	St. Louis	MO	US	
Bates, Chris	Ballwin	MO	US	
Seifert-Higgins, Simone	Pacific	MO	US	
Brinker, Ronald J.	Ellisville	MO	US	

US-CL-CURRENT: 504/365

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 2. Document ID: US 20030087764 A1

L8: Entry 2 of 5

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087764

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030087764 A1

TITLE: Stable liquid pesticide compositions

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Pallas, Norman R.	Florissant	MO	US	
Gillespie, Jane L.	St. Louis	MO	US	
Singh, Lata	Ellisville	MO	US	
Xu, Xiaodong C.	Valley Park	MO	US	

US-CL-CURRENT: 504/365

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 3. Document ID: US 20020173423 A1

L8: Entry 3 of 5

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173423

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020173423 A1

TITLE: Ammonium glyphosate compositions and process for their preparation

PUBLICATION-DATE: November 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Massmann, Brent D.	Ballwin	MO	US	
Wang, John T.	St. Louis	MO	US	
Campbell, Dwane H.	Wildwood	MO	US	

US-CL-CURRENT: 504/106

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 4. Document ID: US 20020123430 A1

L8: Entry 4 of 5

File: PGPB

Sep 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020123430

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020123430 A1

TITLE: Pesticide compositions containing oxalic acid

PUBLICATION-DATE: September 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Xu, Xiaodong C.	Valley Park	MO	US	
Brinker, Ronald J.	Ellisville	MO	US	
Reynolds, Tracey L.	Ballwin	MO	US	
Abraham, William	Wildwood	MO	US	
Graham, Jeffrey A.	Wildwood	MO	US	

US-CL-CURRENT: 504/206; 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☒ 5. Document ID: US 5863879 A

L8: Entry 5 of 5

File: USPT

Jan 26, 1999

US-PAT-NO: 5863879

DOCUMENT-IDENTIFIER: US 5863879 A

TITLE: Dye transfer inhibitors for detergents

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Zirnstein; Michael	Schriesheim			DE
Trieselt; Wolfgang	Ludwigshafen			DE
Oppenlander; Knut	Ludwigshafen			DE
Nilz; Claudia	Rodersheim-Gronau			DE
Kroner; Michael	Mannheim			DE
Gunther; Wolfgang	Mettenheim			DE

US-CL-CURRENT: 510/360; 510/361, 510/475, 510/476, 510/499, 525/398, 525/400,
528/220, 528/230, 528/243

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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13 and L6

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L8: Entry 2 of 5

File: PGPB

May 8, 2003

DOCUMENT-IDENTIFIER: US 20030087764 A1

TITLE: Stable liquid pesticide compositions

Current US Classification, US Primary Class (1): -504Summary of Invention Paragraph (134):

[0130] Some preferred cationic surfactants include alkylamine ethoxylates (including etheramines and diamines) such as tallowamine ethoxylate, cocoa mine ethoxylate, etheramine ethoxylate, tallow ethylenediamine ethoxylate and amidoamine ethoxylates; alkylamine quaternary amines such as alkoxyated quaternary amines (e.g., ethoxylated quaternary amines or propoxylated quaternary amines); alkylamine acetates such as tallowamine acetate or octylamine acetate; and amine oxides such as ethoxylated amine oxides (e.g., N,N-bis(2-hydroxyethyl) cocoamine-oxide), nonethoxylated amine oxides (e.g., cethyldimethylamine-oxide) and amidoamine oxides.

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L8: Entry 2 of 5

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030087764
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030087764 A1

TITLE: Stable liquid pesticide compositions

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Pallas, Norman R.	Florissant	MO	US	
Gillespie, Jane L.	St. Louis	MO	US	
Singh, Lata	Ellisville	MO	US	
Xu, Xiaodong C.	Valley Park	MO	US	

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Monsanto Technology LLC				02

APPL-NO: 09/ 988352 [PALM]
DATE FILED: November 19, 2001

RELATED-US-APPL-DATA:

Application 09/988352 is a continuation-in-part-of US application 09/926521, filed April 26, 2002, PENDING
Application 09/926521 is a a-371-of-international WO application PC/T/US01/16550, filed May 21, 2001, UNKNOWN
Application is a non-provisional-of-provisional application 60/206628, filed May 24, 2000,
Application is a non-provisional-of-provisional application 60/205524, filed May 19, 2000,
Application is a non-provisional-of-provisional application 60/273234, filed March 2, 2001,
Application is a non-provisional-of-provisional application 60/274368, filed March 8, 2001,

INT-CL: [07] A01 N 25/04, A01 N 25/16

US-CL-PUBLISHED: 504/365

US-CL-CURRENT: 504/365

ABSTRACT:

Aqueous pesticidal concentrate emulsions or microemulsions are described which are storage stable after exposure to temperatures ranging from 60.degree. C. to -20.degree. C.

REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. application Ser. No.

09/926,521, filed Nov. 14, 2001, which was the National Stage of International Application No. PCT/US01/16550, filed May 21, 2001, which claims the benefit of U.S. Provisional Application No. 60/206,628, filed May 24, 2000, U.S. Provisional Application No. 60/205,524, filed May 19, 2000, U.S. Provisional Application No. 60/273,234, filed Mar. 2, 2001, and U.S. Provisional Application No. 60/274,368, filed Mar. 8, 2001.

☐

Print

Nov 21, 2002

TITLE: Ammonium glyphosate compositions and process for their preparation

504

[0034] In general, the adjuvant added to the reaction mixture may be a nonionic surfactant, cationic surfactant, anionic surfactant, amphoteric surfactant, silicone surfactant, fluorocarbon surfactant or lubricant. Exemplary nonionic surfactants include alkylpolyglucosides; glycerol esters such as glyceryl monolaurate, and ethoxylated glyceryl monococoate; ethoxylated castor oil; ethoxylated reduced sugar esters such as polyoxyethylene sorbitol monolaurate; esters of other polyhydric alcohols such as sorbitan monolaurate and sucrose monostearate; ethoxylated amides such as polyoxyethylene cocoamide; ethoxylated esters such as monolaurate of polyethylene glycol 1000 and dilaurate of polyethylene glycol 6000; ethoxylated alkyl or arylphenols such as nonylphenol ethoxylate, octylphenol ethoxylates, dodecylphenol ethoxylates, dinonylphenol ethoxylates and tristerylphenol ethoxylates; alcohol ethoxylates such as fatty alcohol ethoxylates (e.g., oleyl alcohol ethoxylate), tridecylalcohol ethoxylates and other alcohol ethoxylates such as neodols and oxoalcohol ethoxylates; and ethylene oxide/propylene oxide copolymers such as pluronic type, tetric type, or tergitol XH type. Exemplary cationic surfactants include alkylamine ethoxylates (including etheramines and diamines) such as tallowamine ethoxylate, cocoamine ethoxylate, etheramine ethoxylate, -tallow ethylenediamine ethoxylate and amidoamine ethoxylates; alkylamine quaternary amines such as alkoxylated quaternary amines (e.g., ethoxylated quaternary amines or propoxylated quaternary amines); alkylamine acetates such as tallowamine acetate or octylamine acetate; and amine oxides such as ethoxylated amine oxides (e.g., N,N-bis(2-hydroxyethyl)cocoamine -oxide), nonethoxylated amine oxides (e.g., cethyltrimethylamine-oxide) and amidoamine oxides. Exemplary anionic surfactants include fatty soaps such as ammonium tallowate and sodium stearate; alkyl sulfates such as sodium C.sub.8-10 alcohol sulfate, sodium oleyl sulfate, and sodium lauryl sulfate; sulfated oils such as sulfated castor oil; ether sulfates such as sodium lauryl ether sulfate, ammonium lauryl ether sulfate, and ammonium nonylphenol ether sulfate; sulfonates such as petroleum sulfonates, alkylbenzene sulfonates (e.g., sodium (linear) dodecylbenzene sulfonate or sodium (branched) dodecylbenzene sulfonate), alkyl naphthalene sulfonates (e.g., sodium dibutyl naphthalene sulfonate), alkyl sulfonates (e.g., alpha olefin sulfonates), sulfosuccinates such as dialkylsulfosuccinates (e.g., sodium dioctylsulfosuccinate) and monoalkylsulfosuccinate and succinamides (e.g., disodium laurylsulfosuccinate and disodium N-alkylsulfosuccinamate-); sulfonated amides such as sodium N-methyl N-coco taurate; isethionates such as sodium cocoyl isethionate; sarcosinates such as N-lauroyl sarcosine; and phosphates such as alkylether ethoxylate phosphates and alkylarylether ethoxylated phosphates. Exemplary amphoteric surfactants include betaines such as simple betaines (e.g., cocodimethylbetaine), sulfobetaines, amidobetaines, and cocoamidobetaines; imidazolinium compounds such as disodium lauroamphodiacetate, sodium cocoamphoacetate, sodium cocoamphopropionate, disodium cocoaminodipropionate, and sodium cocoamphohydroxypropyl sulfonate; and other amphoteric surfactants such as N-alkyl, N,-bis(2-hydroxyethyl)glycine and alkylaminodipropionates. Exemplary lubricants include fatty acids such as oleic acid; silicon oils such as polydimethylsiloxane; fatty esters such as corn oil, sugars and reduced sugars. In a preferred embodiment, at least one adjuvant added to

the reaction mixture is cationic, amphoteric or selected from the class of surfactants known as alkyl polyglycosides (APGs) and polyoxyethylene C.sub.16-22 alkylethers (each of which is nonionic). Polyoxyethylene derivatives of such cationic and amphoteric surfactants are particularly preferred. The term "alkyl" is used in the present context to denote one or more linear or branched, saturated or unsaturated hydrocarbyl chains having, unless otherwise specified, about 8 to about 22 carbon atoms.

WEST**End of Result Set**

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L8: Entry 5 of 5

File: USPT

Jan 26, 1999

DOCUMENT-IDENTIFIER: US 5863879 A

TITLE: Dye transfer inhibitors for detergents

Brief Summary Text (49):

Also suitable for use as component (c) are residues from amine distillations such as, for example, the distillation of diethylenetriamine and of other abovementioned amines and also etheramines such as 2-methoxyethylamine, 2-ethoxyethylamine, 1-methoxy-2-aminopropane, 3-methoxypropylamine, 2-methoxy-1-aminopropane, 3-ethoxypropylamine, di-2-methoxyethylamine, 3-(2-methoxyethoxy)propylamine, 4,7-dioxadecane-1,10-diamine, 4,9-dioxadecane-1,12-diamine, 4,11-dioxatetradecane-1,14-diamine, 4,7,10-trioxadecane-1,13-diamine and other etherdiamines, amino ether alcohols such as 2-(2-aminoethoxy)ethanol, 2-[2-(dimethylamino)ethoxy]ethanol, 2-[2-(diethylamino)ethoxy]ethanol, 3-(diethylamino)-1,2-propanediol and other amino ether alcohols, amino alcohols such as 2-aminoethanol, 2-methylaminoethanol, 2-dimethylaminoethanol, 2-(ethylamino)ethanol, 2-diethylaminoethanol, diisopropylethanolamine, 2-amino-1-propanol, 1-amino-2-propanol, 3-amino-1-propanol, 3-(dimethylamino)-1-propanol, 1-(ethylamino)-2-propanol, 2-(2-dimethylaminoethoxy)ethanol, bis(2-hydroxyethyl)amine, tris(2-hydroxyethyl)amine, bis(2-hydroxypropyl)amine, tris(2-hydroxypropyl)amine, 2-(butylamino)ethanol, 2-(cyclohexylamino)ethanol, 2-(dibutylamino)ethanol, tert-butylethanolamine, tert-butyldiethanolamine, methyldiethanolamine, butyldiethanolamine, dimethylisopropanolamine, methyldiisopropanolamine, N-(2-hydroxyethyl)-1,2-diaminoethane, N,N-bis(2-hydroxyethyl)-1,2-diaminoethane, N,N'-bis(2-hydroxyethyl)-1,2-diaminoethane, N,N,N'-tris(2-hydroxyethyl)-1,2-diaminoethane, N-(2-hydroxyethyl)-1,2-diaminopropane, N,N-bis-(2-hydroxyethyl)-1,2-diaminopropane, N,N'-bis(2-hydroxyethyl)-1,2-diaminopropane, N,N,N'-tris(2-hydroxyethyl)-1,2-diaminopropane, N-(2-hydroxyethyl)-1,3-diaminopropane, N,N-bis(2-hydroxyethyl)-1,3-diaminopropane, N,N'-bis-(2-hydroxyethyl)-1,3-diaminopropane, N,N,N'-tris(2-hydroxyethyl)-1,3-diaminopropane, N,N,N',N'-tetrakis(2-hydroxyethyl)-1,3-diaminopropane, 3-amino-2,2-dimethyl-1-propanol, 3-dimethylamino-2,2-dimethyl-1-propanol, 3-(2-hydroxyethylamino)-1-propanol, 2-amino-1-butanol, 2-dimethylamino-1-butanol and 2-[(aminoethyl) amino]ethanol.

Current US Class (1):510

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L15: Entry 1 of 4

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104943

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104943 A1

TITLE: Novel surfactants and formulations

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lennon, Patrick J.	Webster	MO	US	
Chen, Xiangyang	Chesterfield	MO	US	
Arhancet, Graciela B.	Creve Coeur	MO	US	
Glaenzer, Jeanette A.	University City	MO	US	
Gillespie, Jane L.	St. Louis	MO	US	
Graham, Jeffrey A.	Wildwood	MO	US	
Becher, David Z.	Point Court	MO	US	
Wright, Daniel R.	St. Louis	MO	US	
Agbaje, Henry E.	St. Louis	MO	US	
Xu, Xiaodong C.	Valley Park	MO	US	
Abraham, William	Wildwood	MO	US	
Brinker, Ronald J.	Ellisville	MO	US	
Pallas, Norman R.	Florissant	MO	US	
Wideman, Al S.	St. Louis	MO	US	
Mahoney, Martin D.	St. Peters	MO	US	
Henke, Susan L.	Webster Groves	MO	US	

US-CL-CURRENT: 504/206

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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[KMC](#)☒ 2. Document ID: US 20030032558 A1

L15: Entry 2 of 4

File: PGPB

Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030032558

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030032558 A1

TITLE: Surfactant adjuvants useful in herbicide compositions

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Stridde, Howard Meyer	Georgetown	TX	US	
Ashrawi, Samir S.	Austin	TX	US	
Lewis, David Charles	Austin	TX	US	
Elsik, Curtis Michael	Austin	TX	US	
Kirby, Andrew Francis	Melbourne		AU	

US-CL-CURRENT: 504/103

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 3. Document ID: US 4415488 A

L15: Entry 3 of 4

File: USPT

Nov 15, 1983

US-PAT-NO: 4415488

DOCUMENT-IDENTIFIER: US 4415488 A

TITLE: Triamine-trioxides, a process for their preparation, and cleaning agents containing these compounds

DATE-ISSUED: November 15, 1983

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Blaschke; Gunter	Winhoring			DE
Reng; Alwin	Kelkheim			DE
Quack; Jochen M.	Eppstein			DE

US-CL-CURRENT: 510/159, 510/120, 510/158, 510/191, 510/197, 510/384, 510/423, 510/433, 510/503, 564/297, 564/298, 568/704

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 4. Document ID: WO 2102153 A2

L15: Entry 4 of 4

File: EPAB

Dec 27, 2002

PUB-NO: WO002102153A2

DOCUMENT-IDENTIFIER: WO 2102153 A2

TITLE: PESTICIDE CONCENTRATES CONTAINING ETHERAMINE SURFACTANTS

PUBN-DATE: December 27, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
AGBAJE, HENRY E	US
BECHER, DAVID Z	US
BATES, CHRISTOPHER I	US
SEIFERT-HIGGINS, SIMONE	US
BRINKER, RONALD J	US

INT-CL (IPC): A01 N 25/30; A01 N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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Previous Page Next Page

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L15: Entry 1 of 4

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104943

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104943 A1

TITLE: Novel surfactants and formulations

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lennon, Patrick J.	Webster	MO	US	
Chen, Xiangyang	Chesterfield	MO	US	
Arhancet, Graciela B.	Creve Coeur	MO	US	
Glaenzner, Jeanette A.	University City	MO	US	
Gillespie, Jane L.	St. Louis	MO	US	
Graham, Jeffrey A.	Wildwood	MO	US	
Becher, David Z.	Point Court	MO	US	
Wright, Daniel R.	St. Louis	MO	US	
Agbaje, Henry E.	St. Louis	MO	US	
Xu, Xiaodong C.	Valley Park	MO	US	
Abraham, William	Wildwood	MO	US	
Brinker, Ronald J.	Ellisville	MO	US	
Pallas, Norman R.	Florissant	MO	US	
Wideman, Al S.	St. Louis	MO	US	
Mahoney, Martin D.	St. Peters	MO	US	
Henke, Susan L.	Webster Groves	MO	US	

APPL-NO: 09/ 926521 [PALM]

DATE FILED: April 26, 2002

PCT-DATA:

DATE-FILED	APPL-NO	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
May 21, 2001	PCT/US01/16550				

INT-CL: [07] A01 N 57/18

US-CL-PUBLISHED: 504/206

US-CL-CURRENT: 504/206

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

A herbicidal composition is provided comprising an aqueous solution of N-phosphonomethylglycine, predominantly in the form of the potassium salt thereof, at a concentration of at least 300 g a.e./l of the composition; and a surfactant component in solution or stable suspension, emulsion, or dispersion in the water,

comprising one or more surfactants in a total amount of about 20 to about 300 g/l of the composition, wherein the composition has a viscosity of less than about 250 centipoise at 0.degree. C. or a Gardner color value less than 10.

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L15: Entry 2 of 4

File: PGPB

Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030032558

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030032558 A1

TITLE: Surfactant adjuvants useful in herbicide compositions

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Stridde, Howard Meyer	Georgetown	TX	US	
Ashrawi, Samir S.	Austin	TX	US	
Lewis, David Charles	Austin	TX	US	
Elsik, Curtis Michael	Austin	TX	US	
Kirby, Andrew Francis	Melbourne		AU	

APPL-NO: 10/ 175535 [PALM]

DATE FILED: June 18, 2002

RELATED-US-APPL-DATA:

Application is a non-provisional-of-provisional application 60/166933, filed November 22, 1999,

INT-CL: [07] A01 N 25/32

US-CL-PUBLISHED: 504/103

US-CL-CURRENT: 504/103

ABSTRACT:

Surfactant adjuvants that improve the bioefficacy of herbicides by combining known surfactancy, or wetting characteristics, of sulfosuccinate or sulfosuccinamate-based surfactants, with the proven bioefficiency characteristics of alkoxyated amine-based surfactants. The surfactant adjuvants contain an amine-based surfactant, and a sulfosuccinate or sulfosuccinamate-based surfactant. The surfactant adjuvants are combined with herbicidal active ingredients, and optionally, one or more formulation aids to form herbicide compositions that have a reduced tendency to cause eye and skin irritation and can be used to control unwanted weeds or vegetation.

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Non-Provisional application Ser. No. 09/718,208 filed on Nov. 21, 2000, which claims the benefit of U.S. Provisional Application No. 60/166,933, filed on Nov. 22, 1999.

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L15: Entry 2 of 4

File: PGPB

Feb 13, 2003

DOCUMENT-IDENTIFIER: US 20030032558 A1

TITLE: Surfactant adjuvants useful in herbicide compositions

Summary of Invention Paragraph (10):

[0008] The present invention provides for surfactant adjuvants that improve the bioefficacy of herbicides. The surfactant adjuvants comprise an amine-based surfactant and a sulfosuccinate or sulfosuccinamate-based surfactant. The sulfosuccinate or sulfosuccinamate-based surfactant may be derived from linear alcohol alkoxylates, branched alcohol alkoxylates, alkylphenol alkoxylates, or hydroxy-bearing hydrophobes. The amine-based surfactant may comprise an alkoxylated amine, and preferably comprises a cocoamine alkoxylate, tallow amine alkoxylate, soya amine alkoxylate, synthetic alkoxylated amine derived from a primary alcohol, alkydiamine alkoxylate, etheramine alkoxylate, alkyletheramine, alkyletheramine alkoxylate, the methyl and ethyl quaternary ammonium salts thereof, and the amine oxides thereof.

Summary of Invention Paragraph (33):

[0030] After preparation, the sulfosuccinate or sulfosuccinamate-based surfactant product may then be blended with a complementary amine-based surfactant. The amine-based surfactant comprises an alkoxylated amine. The amine-based surfactant may include, but is not limited to, polyoxyalkyleneamines (including, but not limited to, those that are commercially available under the JEFFMAINE.RTM. tradename from the Huntsman Corporation, Houston, Tex.), polyalkoxylate polyamines, cocoamine alkoxylates, soya amine alkoxylates, tallow amine alkoxylates, synthetic alkoxylated amines derived from primary alcohols, alkydiamine alkoxylates, etheramine alkoxylates, alkyletheramines, alkyletheramine alkoxylates, the methyl and ethyl quaternary ammonium salts thereof, and the amine oxides thereof (several of which are commercially available under the SURFONIC.RTM. and OL trade names, from the Huntsman Corporation, Houston, Tex.).

Detail Description Paragraph (15):

[0044] Each of the adjuvant solutions prepared in Example 2 was then blended with a glyphosate solution, so that the final solutions contained 7.5%, 15%, and 30% of the adjuvant solution prepared in Example 2. Rodeo.RTM. was used as the source of glyphosate. (Rodeo.RTM. contains 648 g/L of the mono-isopropylamine salt of glyphosate.) An outside laboratory conducted bioefficacy testing using the blended glyphosate solutions. Bioefficacy testing was conducted on pitted morning glory, lambs quarters, and velvet leaf weeds. For comparison, the laboratory also tested the bioefficacy of a glyphosate solution that did not contain a surfactant, namely, Rodeo.RTM., and a glyphosate solution that contained an ethoxylated etheramine, namely Roundup.RTM.Ultra (commercially available from the Monsanto Company, St. Louis, Mo.).

Detail Description Table CWU (1):

1 Sulfosuccinate- Based Surfactant from Adjuvant Example 1c Water Amine-Based Surfactant A 25.6% 14.9% 5.9% (SURFONIC .RTM. T-2).sup.1 53.6% (SURFONIC .RTM. T-15).sup.2 B 44.0% 11.0% 45.0% (SURFONIC .RTM. T-10).sup.3 C 27.2% 14.7% 58.1% (ethylene diamine + 4PO + 20EO) D 73.0% 5.0% 22.0% (ethylene diamine + 4PO) 1,2,3 Commercially available from the Huntsman Corporation, Houston, Texas.

CLAIMS:

34. The method of claim 32, wherein the alkoxyated amine surfactant is selected from the group consisting of polyoxyalkyleneamines, polyalkoxylate polyamines, cocoamine alkoxyates, tallow amine alkoxyates, soya amine alkoxyates, synthetic alkoxyated amines derived from primary alcohols, alkydiamine alkoxyates, etheramine alkoxyates, alkyletheramines, alkyletheramine alkoxyates, the methyl and ethyl quaternary ammonium salts thereof, and the amine oxides thereof.

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L15: Entry 3 of 4

File: USPT

Nov 15, 1983

DOCUMENT-IDENTIFIER: US 4415488 A

TITLE: Triamine-trioxides, a process for their preparation, and cleaning agents containing these compounds

Brief Summary Text (6):

There is therefore a need for surfactant-like substances which do not have the above disadvantages. Amine-oxides and diamine-dioxides, even those which have hydroxyethyl substituents, are known as surfactant-like substances which are said to be free of these disadvantages (cf., M. J. Schick "Nonionic Surfactants", Marcel Dekker, New York, 1967, page 403 et seq.; U.S. Pat. No. 3,197,509 and U.S. Pat. No. 3,234,139). However, these substances can satisfy the need only to a limited extent, since they lack adequate hydrophilic character and have unsatisfactory antistatic properties.

Brief Summary Text (20):

Triamine-trioxides according to the invention can be used in such liquid, pulverulent or aerosol-type industrial and cosmetic cleaning agents not only alone but also combined with anionic, cationic, nonionic and amphoteric surfactants which are customarily used in such agents. Examples of anionic surfactants which are suitable for this purpose are soaps, fatty alcohol sulfates, alkyl ether sulfates, fatty acid condensation products, such as taurides, methyltaurides and sarcosides, .alpha.-olefinsulfonates, hydroxyalkanesulfonates, secondary alkanesulfonates, amide ether sulfates and alkylbenzenesulfonates. Examples of compounds which can be used as nonionic surfactants are polyglycol monoalkyl ethers and monoesters, amine oxides and ethylene oxide/propylene oxide condensation products. In addition, the combination with other amphoteric surfactants, such as alkylbetaines, alkylamidobetaines, imidazoline derivatives or sulfobetaines, is also possible. Finally, triamine-trioxides according to the invention can also be used admixed with cationic surfactants, such as cetyltrimethylammonium chloride, cetyltrimethylammonium bromide, pentaerythritylstearyl ammonium chloride, quaternized etheramines or polymeric quaternary ammonium compounds. Further additives which are used in an otherwise customary manner in cosmetic cleaning agents can be combined with the triamine-trioxides. Examples of these additives are viscosity-increasing or viscosity-decreasing compounds such as cellulose ethers, electrolytes, such as, for example, sodium chloride or ammonium chloride, fatty acid polyglycol esters, alkanolamides, magnesium aluminum silicates, polyglycols, glycerol and ethanol. Further additives which can be used are perfume oils and special fragrances, antiseptic agents, dandruff-removing or fungus-killing agents, superfatting agents, preservatives, dyestuffs and nacreous substances. Filler and carrier substances which are customarily used, such as highly disperse and amorphous silica, sodium sulfate, magnesium aluminum silicate, starch derivatives and the like, can also be used in the processing to give pulverulent formulations. Finally, customary propellant gases can also be admixed in the case of aerosol-type formulations. To control the pH value desired, inorganic or organic acids or alkalis can be used. Chelating agents and, if appropriate, also dispersions of plastics can be added as customary auxiliaries to industrial cleaning agents. Other additives which are customary for this purpose are bleaching agents, chlorine-donors or other disinfectants. To improve the abrasion effect, suitable additives are chalk, highly disperse amorphous silica, phosphates and plastics. To improve the fat- and soil-solubilizing properties, solvents such as universal spirit or isopropyl alcohol or other cleaning-promoting agents can also be added. Finally, the triamine-trioxides according to the invention are suitable for use as agents for washing textiles.

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L14</u>	l12 not L13	4	<u>L14</u>
<u>L13</u>	l5 or l7	11	<u>L13</u>
<u>L12</u>	l10 and L11	9	<u>L12</u>
<u>L11</u>	l1 same L9	52	<u>L11</u>
<u>L10</u>	l2 same L9	4633	<u>L10</u>
<u>L9</u>	surfactant\$1 or (surface active\$1)	331476	<u>L9</u>
<u>L8</u>	L7 not l5	5	<u>L8</u>
<u>L7</u>	l3 and L6	5	<u>L7</u>
<u>L6</u>	(510 OR 504).CLAS.	44856	<u>L6</u>
<u>L5</u>	L3.ab.	6	<u>L5</u>
<u>L4</u>	L3.ti.	0	<u>L4</u>
<u>L3</u>	l1 with L2	49	<u>L3</u>
<u>L2</u>	diamine\$1	114965	<u>L2</u>
<u>L1</u>	etheramine\$1 or alkyletheramine\$1	283	<u>L1</u>

END OF SEARCH HISTORY